

U.S. INFORMATION SERVICES
VENDOR ANALYSIS PROGRAM

Computer Industry Financial Watch

Year End 1991

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COMPUTER INDUSTRY FINANCIAL WATCH

YEAR END 1991

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***Computer Industry Financial Watch,
Year End 1991***

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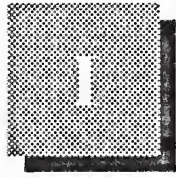
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Introduction

A

Issue Highlights

This issue of the *Computer Industry Financial Watch* focuses on *winners and losers*—the strong performers and those with problems:

- Compared to the last issue of the *Computer Industry Financial Watch*, overall earnings went from positive to negative, and the rate of revenue growth declined. This issue examines the extent of these negative results, and identifies areas where specific company performance influences an entire group average.
- By separating the PC software companies into a new segment (SFTP), and comparing it to the segment containing the remaining, more general software companies (SOFT) as well as the other segments, INPUT found that SFTP is the real winner on many measures.

In addition to identifying the performance leaders and providing INPUT's overview of the total group of companies in the *Computer Industry Financial Watch*, this issue highlights the performance problems and reveals the bright spots.

B

Organization

INPUT's *Computer Industry Financial Watch* is being published to provide computer industry management, industry analysts and other interested parties with a single, periodic source of financial performance information on public companies whose primary business (greater than 50%) is providing products and services within the computer industry. The *Computer Industry Financial Watch* provides a consistent and comprehensive source of comparative rankings and analysis of financial performance so that interested parties can make improved business decisions.

The *Computer Industry Financial Watch* is organized as follows:

- Each chapter contains a brief summary, followed by statistical analysis. Significant changes and special analyses are reported in each issue.
- *Chapter II - Industry Performance*: Chapter II starts with an analysis of the industry by category segment and market size. Then, all public companies covered in this report are analyzed without regard to segment. The top performers are identified by measurement and all companies are ranked by each measurement. In this issue, a special report at the end of Chapter II focuses on the software industry segments.
- *Chapters III-VIII- Industry Performance by Category*: A separate chapter on each of the six industry segments identifies the top ten performers under each performance measurement and ranks all companies within the category. The final chart in each chapter lists all companies in the segment ordered by revenue. It gives the performance measures for each company along with the ranking results.
- *Appendix A - Background Data—All Companies*: An alphabetical listing of all companies reviewed by this report, with a synopsis of the financial data.
- *Appendix B - Changes in Companies Included in This Report*: A listing of the computer companies that have been added to or excluded from the group of companies since the last issue of the *Computer Industry Financial Watch*.
- *Appendix C - Variable Definitions*: A listing of the definitions for each of the measures used in the *Computer Industry Financial Watch*.

The focus of the analysis is traditional financial data used to rank and compare company and industry category performance. The data appearing in each chapter are summarized in Exhibit I-1.

EXHIBIT I-1

Computer Industry Financial Watch Data

Information	Analysis	Chapter
Revenue Revenue per Employee	Totals by market size groupings	II - VIII
Revenue Earnings Profit Margins Revenue per Employee	Software segments compared by quartile	II
Revenue & Revenue Growth Earnings Profit Margins Revenue per Employee Earnings per Employee	Segment totals (except earnings/employee) Leading performers	II II - VIII
Company Data on Ranked Measures	Tabulation plus ranking summary	III - VIII
Market Value Earnings per Share Total Assets Number of Employees Company's Fiscal Year End Last Reporting Date	Tabulation	Appendix A

Each quarterly report covers financial performance for the past four reported quarters. The current report covers quarterly performance data reported as of April 10, 1992.

INPUT has carefully categorized over 300 firms listed on U.S. stock exchanges with more than \$5 million in annual revenues. The categories are defined in this section. The classification of companies that participate in more than one of the categories is based on the category that is their greatest source of revenue.

INPUT will review the list of companies that are included prior to each quarterly publication and add or delete as appropriate. Changes are noted in Appendix B of the *Computer Industry Financial Watch*.

Companies not included at this time are semiconductor manufacturers and retailers and distributors of computer products. Appendix B also lists companies that were not included because they either fall into the latter grouping, or show less than \$5 million in revenues.

The categorization of the companies is defined in Exhibit I-2. Please note that the codes are used throughout the report.

The data presented has been rounded as follows:

- *Revenue and Earnings* are reported to the nearest million dollars and only companies with \$5 million in revenue during the last four reported quarters are included.
- *Profit Margins* are reported to the nearest tenth of a percent.
- All other *percentages* are reported to the nearest whole percent.

The data presented in the *Computer Industry Financial Watch* is drawn from public information on the companies listed and from INPUT publications, unless otherwise specified.

- The classification of the companies and tabulation, rankings and analysis of the results has been performed by INPUT.
- The financial results of the companies were provided by Standard & Poor's Compustat Services, Inc.

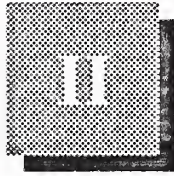
This report is distributed subject to the following statement.

INPUT exercises its best efforts in preparation of the information provided in this report and believes the information contained herein to be accurate. However, INPUT shall have no liability for any loss or expense that may result from incompleteness or inaccuracy of the information provided.

EXHIBIT I- 2

Industry Segment Definitions

Category	Code	Description
Software Products Companies	SOFT	• Systems Software Products (e.g., Goal Systems) • Applications Software Products (e.g., Comshare) • Turnkey Systems (e.g., Intergraph)
PC Software Products Companies	SFTP	
Professional Services Companies	PROF	• Companies whose primary offerings are people-based services such as consulting, software development, education and training and systems integration (e.g., American Management Systems, Keane)
Processing/Network Services Companies	PROC	• Processing Services (e.g., ADP) • Network Applications (e.g., GEIS) • Electronic Information Services (e.g., Reuters) • Systems Operations (e.g., EDS)
Computer Systems Manufacturers	CSMR	• Manufacturers of complete computer systems (e.g., IBM, Digital Equipment Corporation, Unisys, Pyramid, and Compaq)
Computer Component Manufacturers	CCMR	• Manufacturers of major components for computer systems (e.g., Seagate, Storage Technology, Masstor, Recognition Equipment and Conner Peripherals). Not included are companies that primarily manufacture semiconductors



Industry Performance

A

Industry Summary and Top Performers

This chapter identifies the performance leaders and provides INPUT's overview of the total group of companies in the *Computer Industry Financial Watch*. The focus for this issue of the *Computer Industry Financial Watch* is on the two extremes of the spectrum: the winners and the losers, or the strong performers and those with problems. They will be identified both in industry segments and in individual companies.

In addition, this issue of the *Computer Industry Financial Watch* examines the software segment in more depth by separating the PC software companies into a new segment (SFTP). This chapter analyzes the performance differences between the SFTP segment and the segment containing the remaining, more general software companies (SOFT).

The first seven exhibits analyze the overall computer industry as represented by the 331 companies in the *Computer Industry Financial Watch*. These exhibits show the impact of company size, and variation in performance among the segments.

- Software, professional services (PROF), and processing services (PROC) companies all improved in earnings and revenues. They all increased their market "share" compared to the two largest segments (CSMR and CCMR).
- Software companies are strong in many areas, and the PC software segment appears to be the strongest of the strong. SFTP leads all the other segments in its ratings for revenue growth, revenue per employee and profit margins.
- Computer system manufacturers (CSMR) and computer component manufacturers (CCMR) suffered declining revenue growth rates. Both segments posted overall losses in earnings and negative margins. These losses weren't limited to a few companies; they were experienced by over half of the CSMR companies and by 40% of CCMR companies. Companies of all sizes in both segments showed negative earnings.
- The 58 medium-sized companies in the \$200 million to \$1 billion dollar range gave a healthy showing, with strong revenues and a second-place position in the revenue per employee rating.

Industry leaders are highlighted in Exhibits II-8 through II-13. These exhibits list the top 20 companies as measured by indicators which include revenue, revenue growth rate, revenue per employee, earnings, and profit margins.

- In addition to being the largest segments, CCMR and CSMR also dominated the list of the top 20 leaders in revenue per employee. CSMR is above average in this category. The PROC and PROF segments aren't even represented on the top 20 list.
- With the exception of Microsoft, all of the top 20 profit margin leaders were smaller companies—below \$750 million in revenues.

In summary, compared to the previous issue of the *Computer Industry Financial Watch*, the strong segments got stronger and the poor performers did even more poorly.

B

Focus on the Software Industry Segment

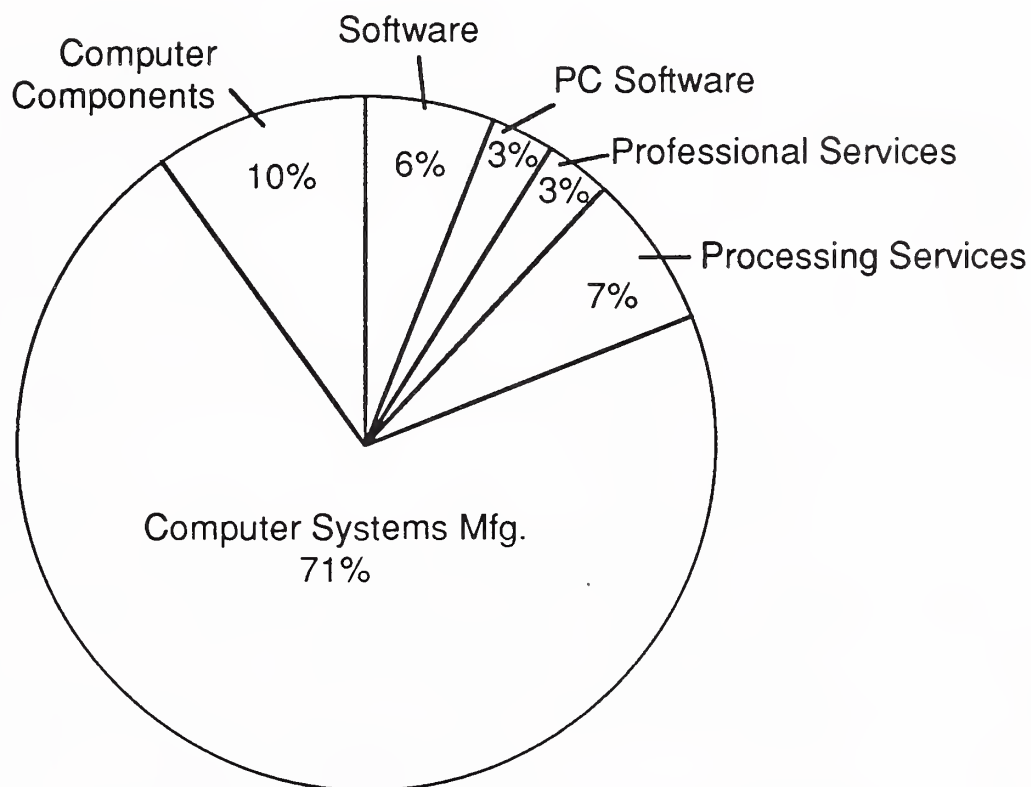
The last four exhibits of this chapter compare the two software industry segments: general software (SOFT) and PC software (SFTP). Since there are 116 companies in the general SOFT category and only 26 PC software companies, a method had to be found to put the segments on a comparable footing. The companies in each segment were divided into four quartiles in declining order of revenue with an equal number of companies in each quartile. Then the largest SFTP quartile could be compared to the largest SOFT quartile. This procedure was used to examine a variety of measures for corresponding quartiles in the SFTP and SOFT segments.

- In most cases, PC software quartiles showed better results than their SOFT counterparts.
- SFTP showed poorer results with respect to earnings and profit margins in the second quartile. This result can be attributed to the relatively large losses shown by two companies in that quartile: Software Publishing and Software Toolworks.
- Similarly, SFTP showed a lower revenue per employee average in the third quartile because that quartile contained the segment's two poorest performers in revenue per employee: SCS/Compute Inc. and Wicat Systems. These are the only two companies in the segment with revenue per employee below \$100,000.

The overall software average (combining SFTP and SOFT) in Exhibits II-14 to II-17 shows software to be a strong part of the industry. It is higher than the other segments in profit margin and above average in revenue per employee.

EXHIBIT II-1

Revenue by Industry Segment

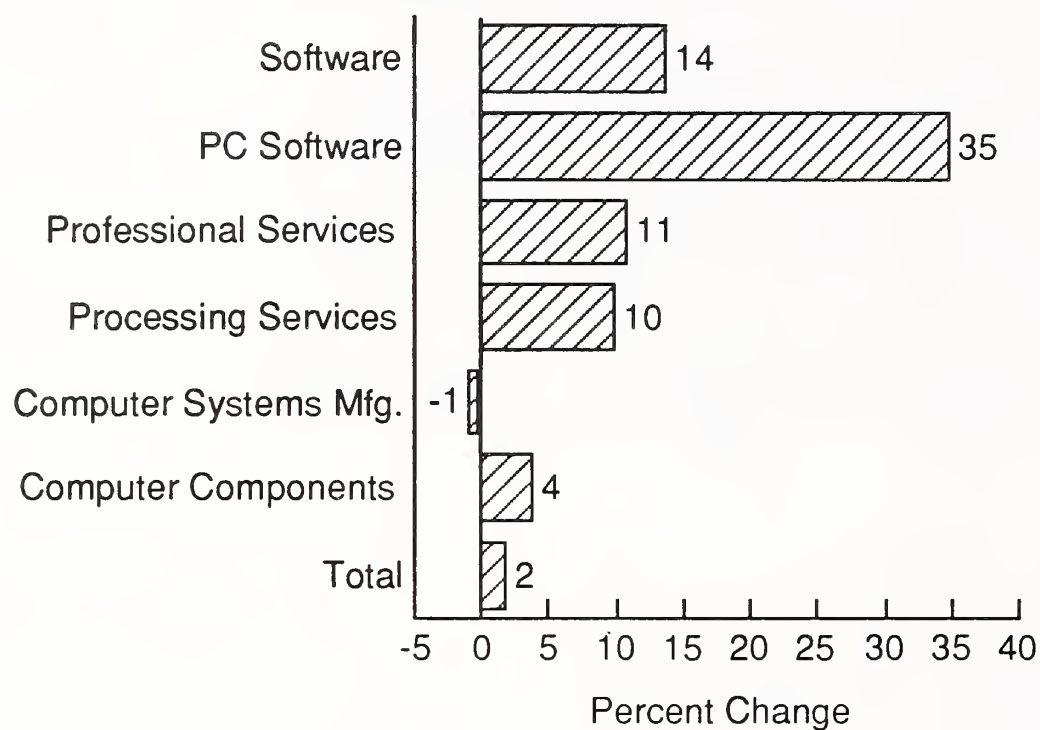


Industry Segment	Latest 4 Qtrs. Revenue (\$M)	Percent of Industry	Industry Segment Code
Software	11,904	6	SOFT
PC Software	6,056	3	SFTP
Professional Services	4,743	3	PROF
Processing Services	13,763	7	PROC
Computer Systems Mfg.	132,607	71	CSMR
Computer Components	18,239	10	CCMR
Total	187,311	100	

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-2

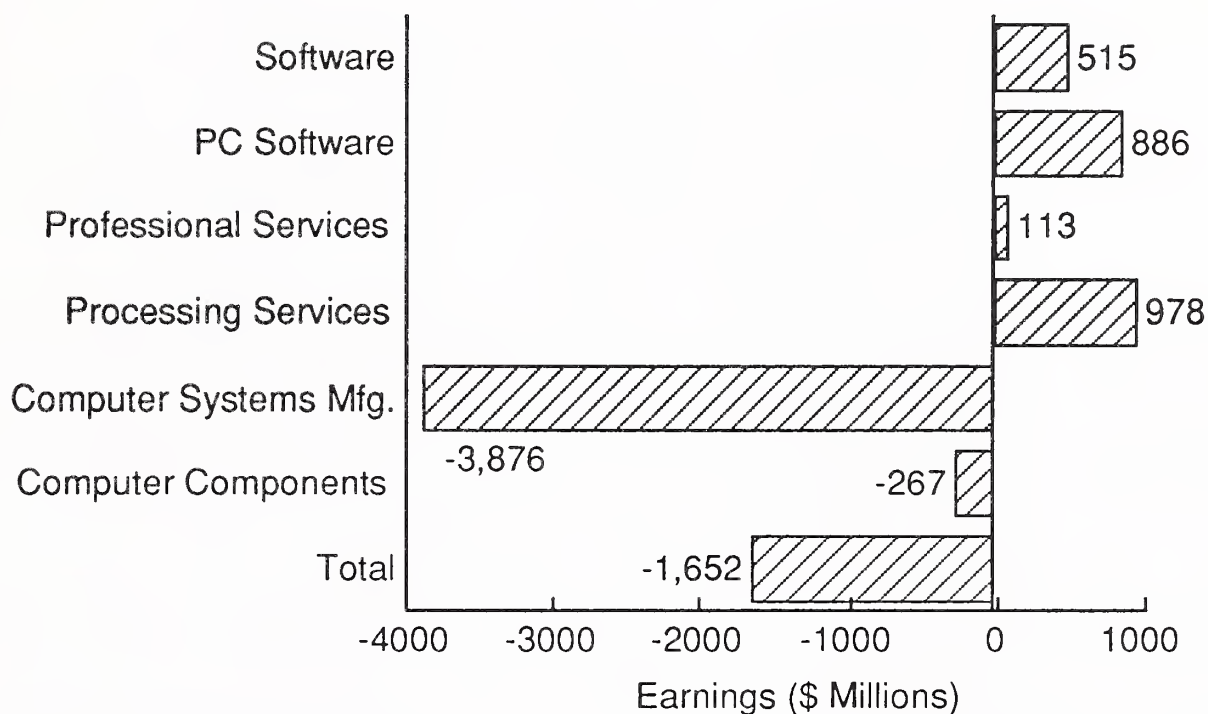
Revenue Growth by Industry Segment



Industry Segment	Revenue (\$M)		Change (Percent)
	Latest 4 Qtrs.	Prior 4 Qtrs.	
Software	11,904	10,328	14
PC Software	6,056	4,420	35
Professional Services	4,743	4,173	11
Processing Services	13,763	12,529	10
Computer Systems Mfg.	132,607	134,440	-1
Computer Components	18,239	17,440	4
Total	187,311	183,331	2

Note: Based on available public data as of April 10, 1992.

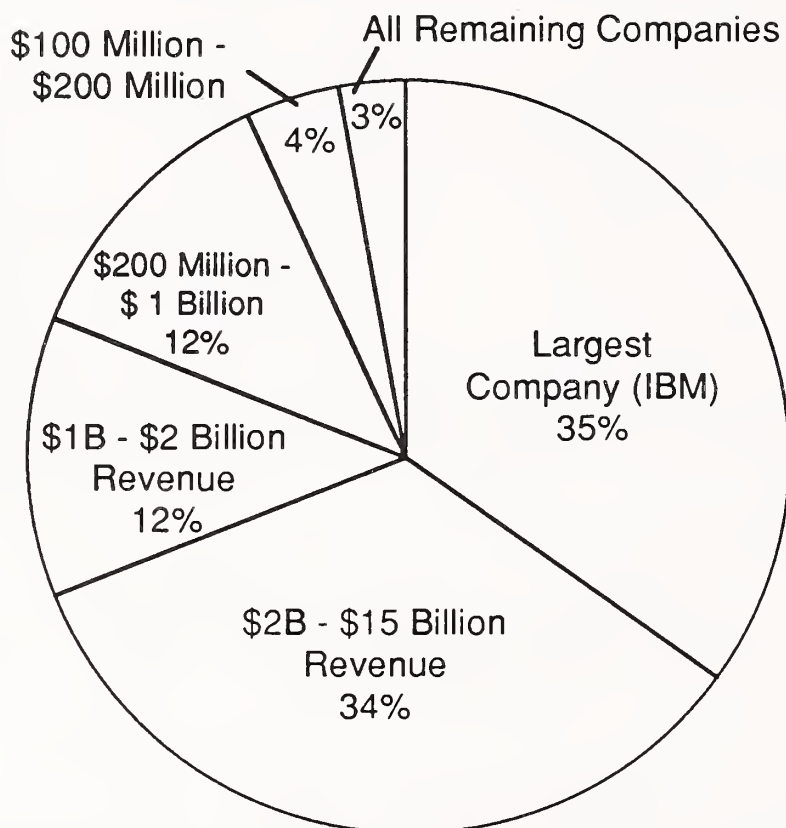
EXHIBIT II-3

Earnings by Industry Segment

Industry Segment	Earnings (\$M)		Earnings Increase (\$M)	Industry Segment Code
	Latest 4 Qtrs.	Prior 4 Qtrs.		
Software	515	457	58	SOFT
PC Software	886	601	284	SFTP
Professional Services	113	86	27	PROF
Processing Services	978	836	143	PROC
Computer Systems Mfg.	-3,876	6,926	-10,802	CSMR
Computer Components	-267	409	-676	CCMR
Total	-1,652	9,315	-10,967	

Note: Based on available public data as of April 10, 1992.

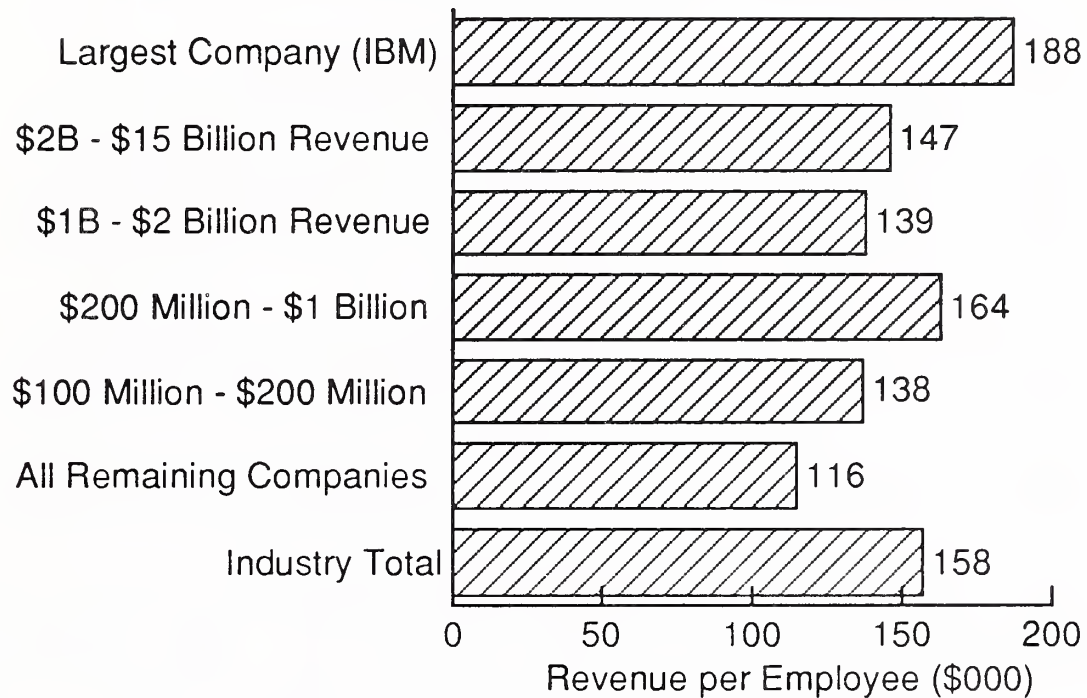
EXHIBIT II-4

Revenue by Company Size

Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Total	Number of Companies
Largest Company (IBM)	64,792	35	1
\$2B - \$15 Billion Revenue	63,078	34	9
\$1B - \$2 Billion Revenue	22,655	12	15
\$200 Million - \$1 Billion	22,827	12	58
\$100 Million - \$200 Million	7,685	4	52
All Remaining Companies	6,274	3	196
Industry Total	187,311	100	331

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-5

Revenue per Employee by Company Size

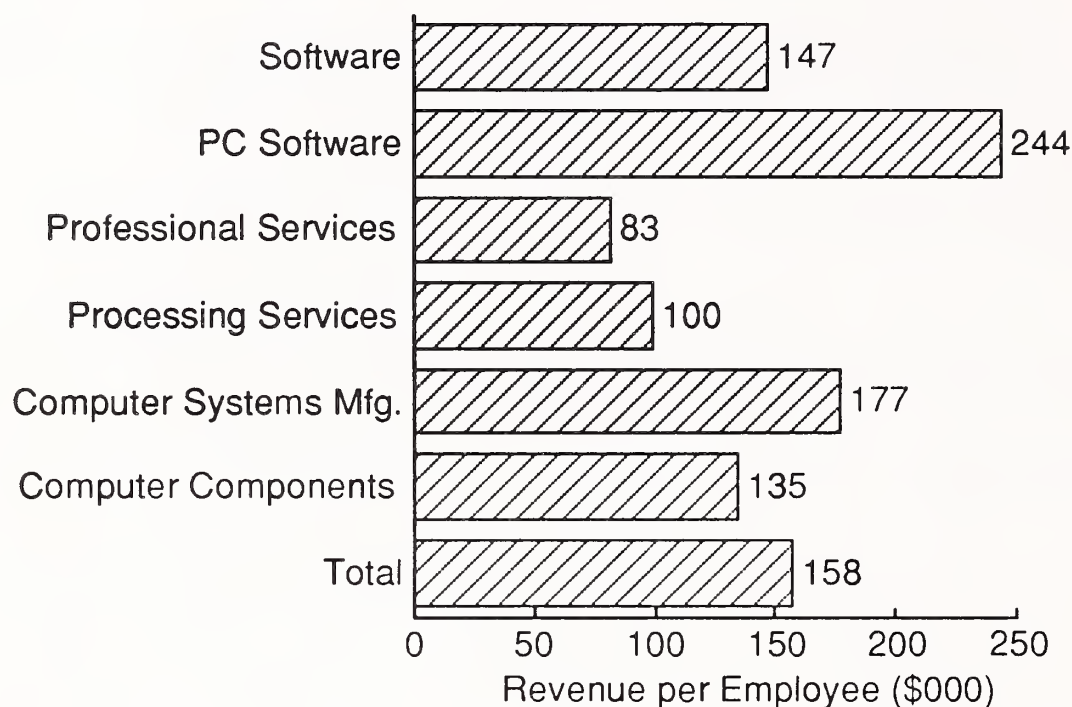
Company Size Grouping	Latest 4 Qtrs.		Revenue per Employee (\$000)	Number of Companies
	Revenue (\$M)	Number of Employees		
Largest Company (IBM)	64,792	344,553	188	1
\$2B - \$15 Billion Revenue	63,078	428,938	147	9
\$1B - \$2 Billion Revenue	21,616	154,970	139	15
\$200 Million - \$1 Billion	22,163	135,115	164	58
\$100 Million - \$200 Million	7,392	53,437	138	52
All Remaining Companies	5,952	51,391	116	196
Industry Total	184,993	1,168,404	158	331

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

Based on available public data as of April 10, 1992.

EXHIBIT II-6

Revenue per Employee by Industry Segment



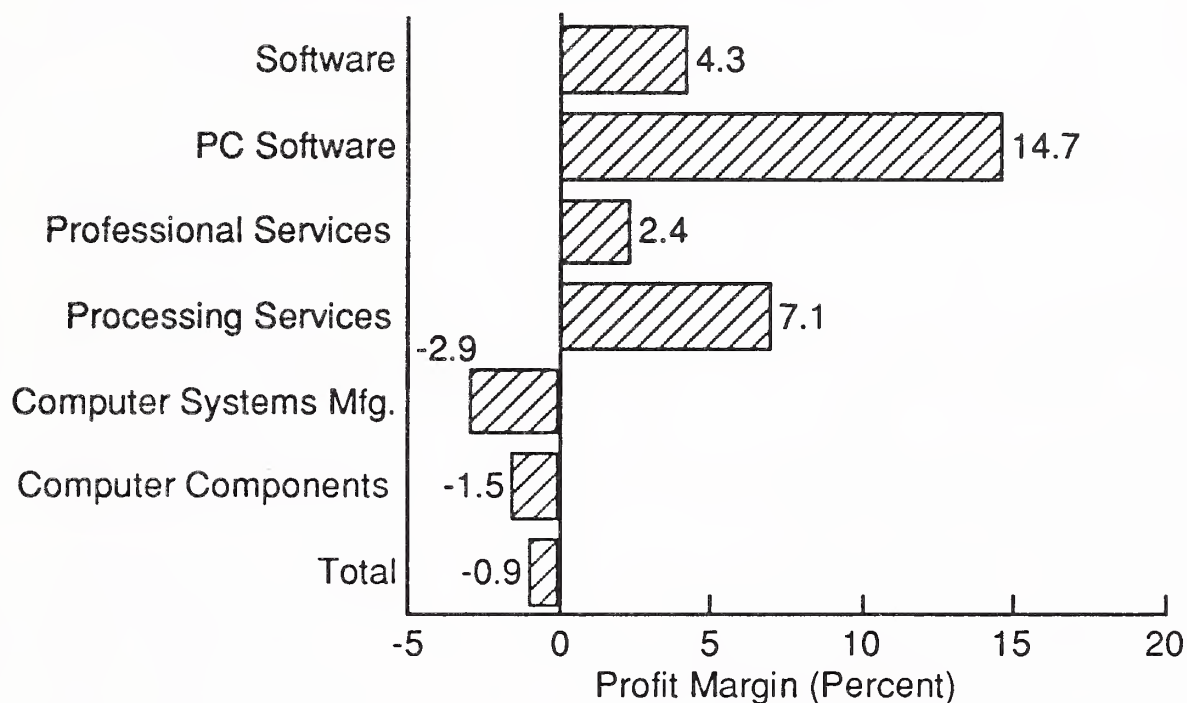
Industry Segment	Latest 4 Qtrs.		Revenue per Employee (\$000)
	Revenue (\$M)	Employees	
Software	11,301	76,870	147
PC Software	6,020	24,713	244
Professional Services	4,701	56,828	83
Processing Services	13,287	133,117	100
Computer Systems Mfg.	131,568	742,677	177
Computer Components	18,116	134,199	135
Total	184,993	1,168,404	158

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

Based on available public data as of April 10, 1992.

EXHIBIT II-7

Profitability by Industry Segment

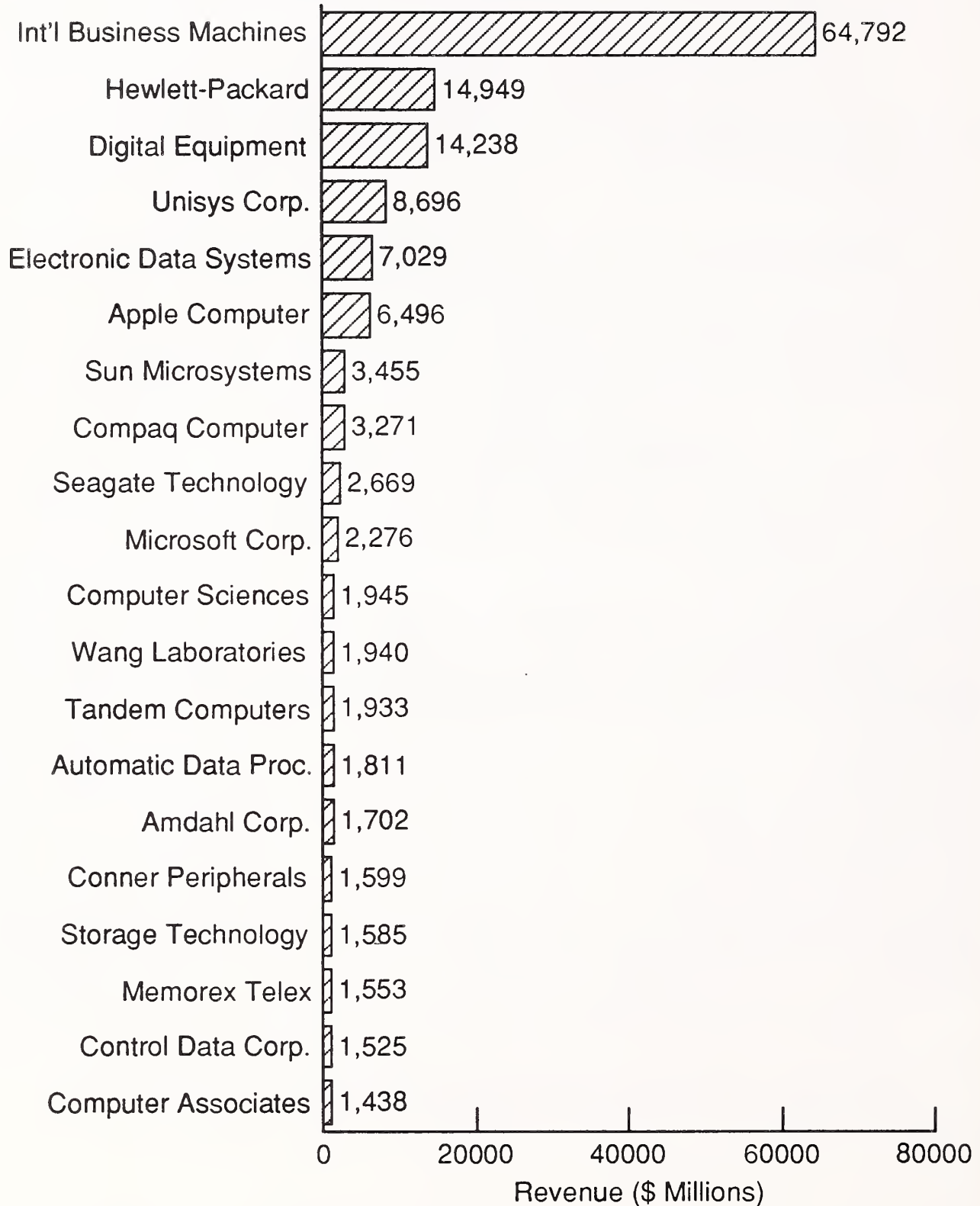


Industry Segment	Latest 4 Qtrs.		Profit Margin (Percent)
	Revenue (\$M)	Earnings (\$M)	
Software	11,895	515	4.3
PC Software	6,020	886	14.7
Professional Services	4,743	113	2.4
Processing Services	13,763	978	7.1
Computer Systems Mfg.	132,589	-3,876	-2.9
Computer Components	18,239	-267	-1.5
Total	187,249	-1,652	-0.9

Note: Totals shown in this exhibit are only for those companies that reported earnings.
Based on available public data as of April 10, 1992.

EXHIBIT II-8

Revenue Leaders



Note: Based on available public data as of April 10, 1992.

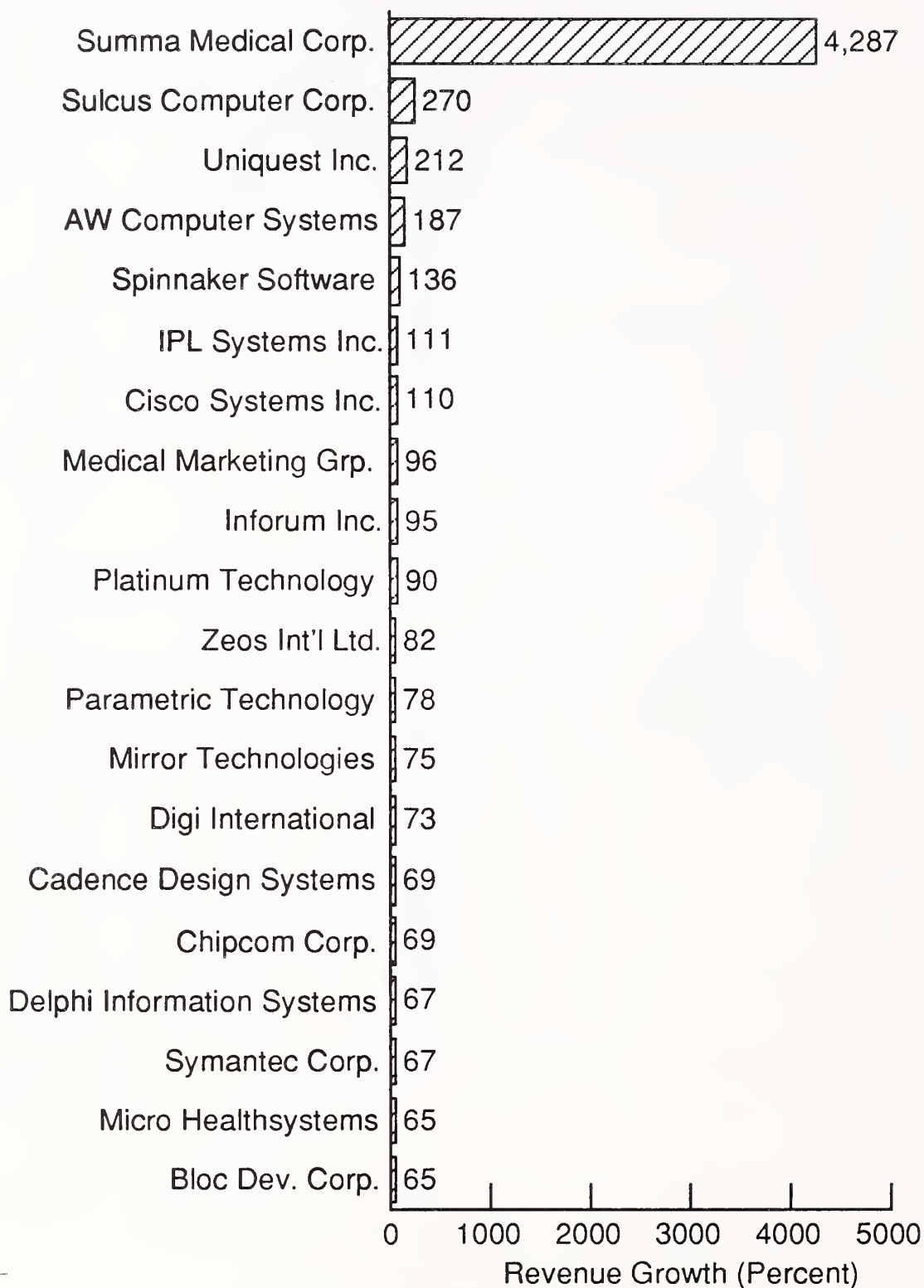
EXHIBIT II-8 (CONT.)

Revenue Leaders

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)	Segment Code
		Latest 4 Qtrs.	Prior 4 Qtrs.		
1	Int'l Business Machines	64,792	69,018	-6	CSMR
2	Hewlett-Packard	14,949	13,538	10	CSMR
3	Digital Equipment	14,238	13,072	9	CSMR
4	Unisys Corp	8,696	10,111	-14	CSMR
5	Electronic Data Systems	7,029	6,022	17	PROC
6	Apple Computer	6,496	5,741	13	CSMR
7	Sun Microsystems	3,455	2,763	25	CSMR
8	Compaq Computer	3,271	3,599	-9	CSMR
9	Seagate Technology	2,669	2,668	0	CCMR
10	Microsoft Corp	2,276	1,478	54	SFTP
11	Computer Sciences	1,945	1,679	16	PROF
12	Wang Laboratories	1,940	2,354	-18	CSMR
13	Tandem Computers	1,933	1,873	3	CSMR
14	Automatic Data Proc	1,811	1,736	4	PROC
15	Amdahl Corp	1,702	2,159	-21	CSMR
16	Conner Peripherals	1,599	1,338	20	CCMR
17	Storage Technology	1,585	1,545	3	CCMR
18	Memorex Telex	1,553	1,951	-20	CCMR
19	Control Data Corp	1,525	1,691	-10	PROC
20	Computer Associates	1,438	1,311	10	SOFT

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-9

Revenue Growth Leaders

Note: Based on available public data as of April 10, 1992.

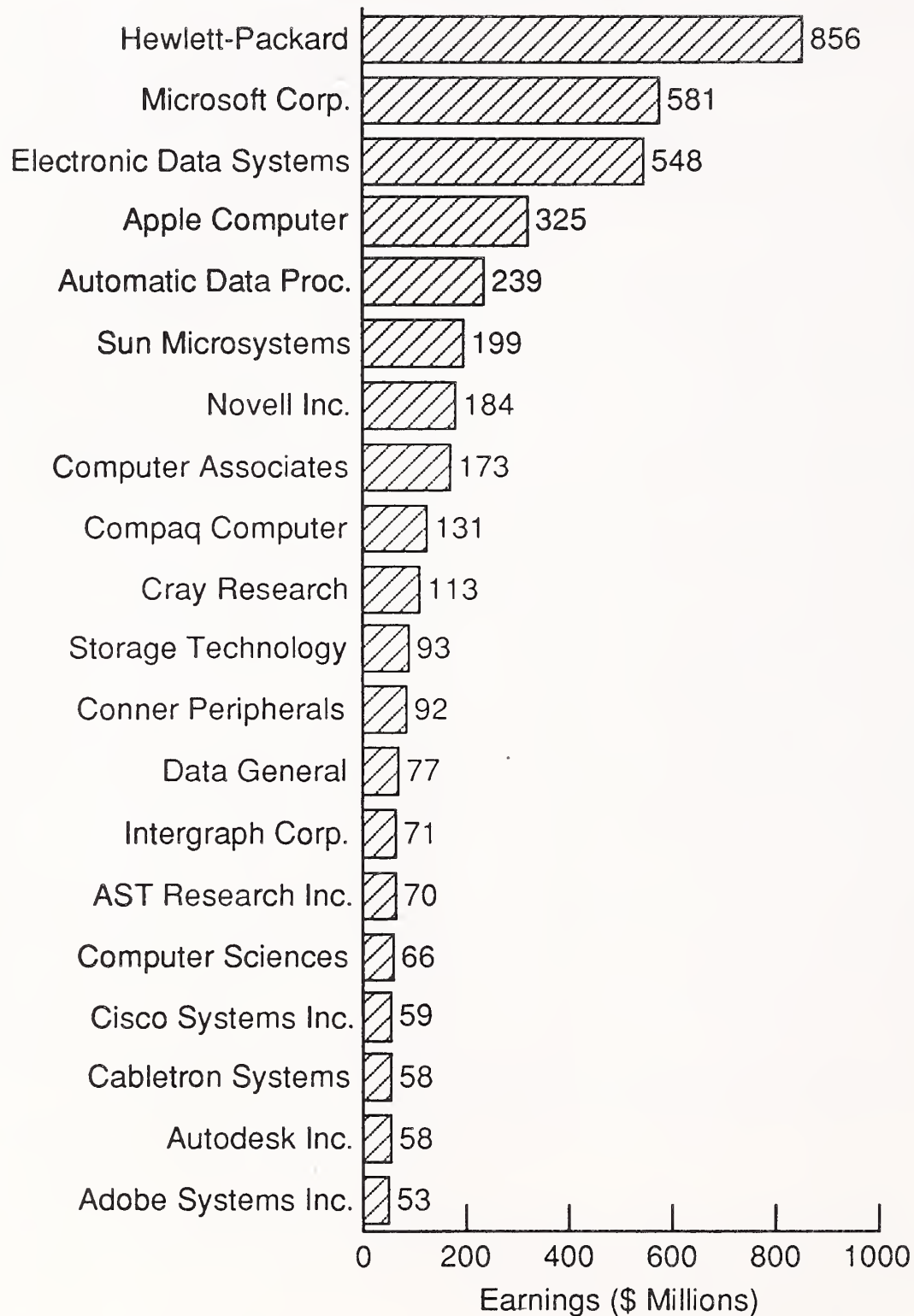
EXHIBIT II-9 (CONT.)

Revenue Growth Leaders

Revenue Growth Rank	Company	Revenue (\$ Millions)		Revenue Growth (Percent)	Segment Code
		Latest 4 Qtrs.	Prior 4 Qtrs.		
1	Summa Medical Corp.	7	0	4,287	PROF
2	Sulcus Computer Corp.	18	5	270	CSMR
3	Uniquist Inc.	10	3	212	SOFT
4	AW Computer Systems	9	3	187	SOFT
5	Spinnaker Software	26	11	136	SFTP
6	IPL Systems Inc.	60	29	111	CSMR
7	Cisco Systems Inc.	244	116	110	CCMR
8	Medical Marketing Grp.	15	7	96	SOFT
9	Inforum Inc.	7	3	95	SOFT
10	Platinum Technology	29	15	90	SOFT
11	Zeos Int'l Ltd.	231	127	82	CSMR
12	Parametric Technology	52	29	78	SOFT
13	Mirror Technologies	18	10	75	CCMR
14	Digi International	46	26	73	CCMR
15	Cadence Design Systems	392	231	69	SOFT
16	Chipcom Corp	48	28	69	CCMR
17	Delphi Information Systems	39	24	67	SOFT
18	Symantec Corp.	184	110	67	SFTP
19	Micro Healthsystems	16	10	65	SOFT
20	Bloc Dev. Corp.	43	26	65	SFTP

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-10

Earnings Leaders

Note: Based on available public data as of April 10, 1992.

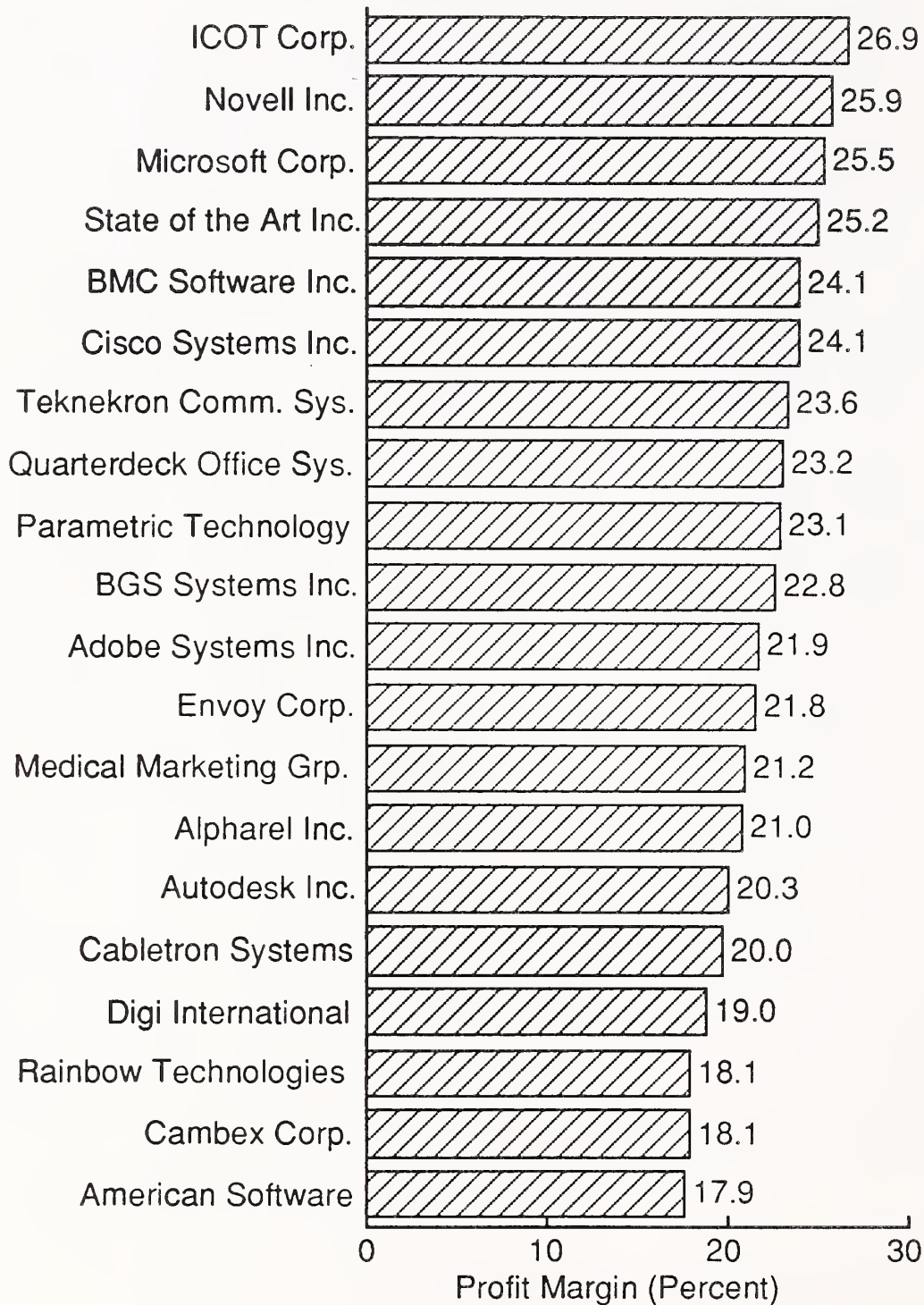
EXHIBIT II-10 (CONT.)

Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Percent Change	Segment Code
		Latest 4 Qtrs.	Prior 4 Qtrs.		
1	Hewlett-Packard	856	771	11	CSMR
2	Microsoft Corp.	581	356	64	SFTP
3	Electronic Data Systems	548	497	10	PROC
4	Apple Computer	325	501	-35	CSMR
5	Automatic Data Proc.	239	220	9	PROC
6	Sun Microsystems	199	151	32	CSMR
7	Novell Inc.	184	110	68	SFTP
8	Computer Associates	173	162	7	SOFT
9	Compaq Computer	131	455	-71	CSMR
10	Cray Research	113	113	0	CSMR
11	Storage Technology	93	92	1	CCMR
12	Conner Peripherals	92	130	-29	CCMR
13	Data General	77	-107	172	CSMR
14	Intergraph Corp.	71	63	14	SOFT
15	AST Research Inc.	70	53	34	CSMR
16	Computer Sciences	66	68	-4	PROF
17	Cisco Systems Inc.	59	27	120	CCMR
18	Cabletron Systems	58	36	61	SOFT
19	Autodesk Inc.	58	57	2	SFTP
20	Adobe Systems Inc.	53	42	24	SFTP

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-11

Profit Margin Leaders

Note: Based on available public data as of April 10, 1992.

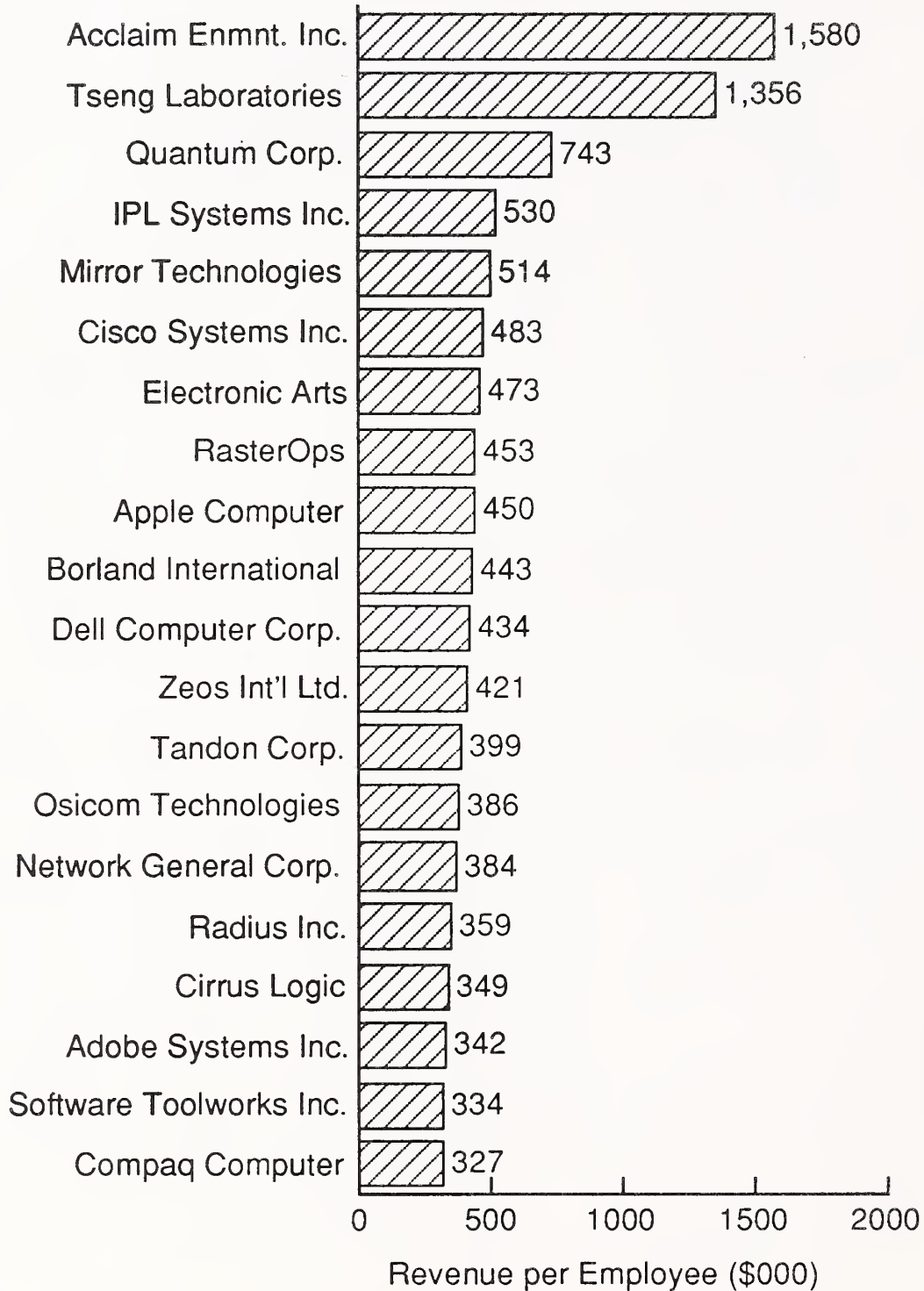
EXHIBIT II-11 (CONT.)

Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Qtrs.		Profit Margin (Percent)	Segment Code
		Earnings (\$ Millions)	Revenue (\$ Millions)		
1	ICOT Corp.	6	22	26.9	CCMR
2	Novell Inc.	184	710	25.9	SFTP
3	Microsoft Corp.	581	2,276	25.5	SFTP
4	State of the Art Inc.	5	19	25.2	SFTP
5	BMC Software Inc.	42	174	24.1	SOFT
6	Cisco Systems Inc.	59	244	24.1	CCMR
7	Teknekron Comm. Sys.	11	45	23.6	CCMR
8	Quarterdeck Office Sys.	12	50	23.2	SFTP
9	Parametric Technology	12	52	23.1	SOFT
10	BGS Systems Inc.	6	25	22.8	SOFT
11	Adobe Systems Inc.	53	240	21.9	SFTP
12	Envoy Corp.	7	30	21.8	PROC
13	Medical Marketing Grp.	3	15	21.2	SOFT
14	Alpharel Inc.	1	7	21.0	CSMR
15	Autodesk Inc.	58	285	20.3	SFTP
16	Cabletron Systems	58	291	20.0	SOFT
17	Digi International	9	46	19.0	CCMR
18	Rainbow Technologies	3	19	18.1	SFTP
19	Cambex Corp.	8	46	18.1	CCMR
20	American Software	20	114	17.9	SOFT

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-12

Revenue per Employee Leaders

Note: Based on available public data as of April 10, 1992.

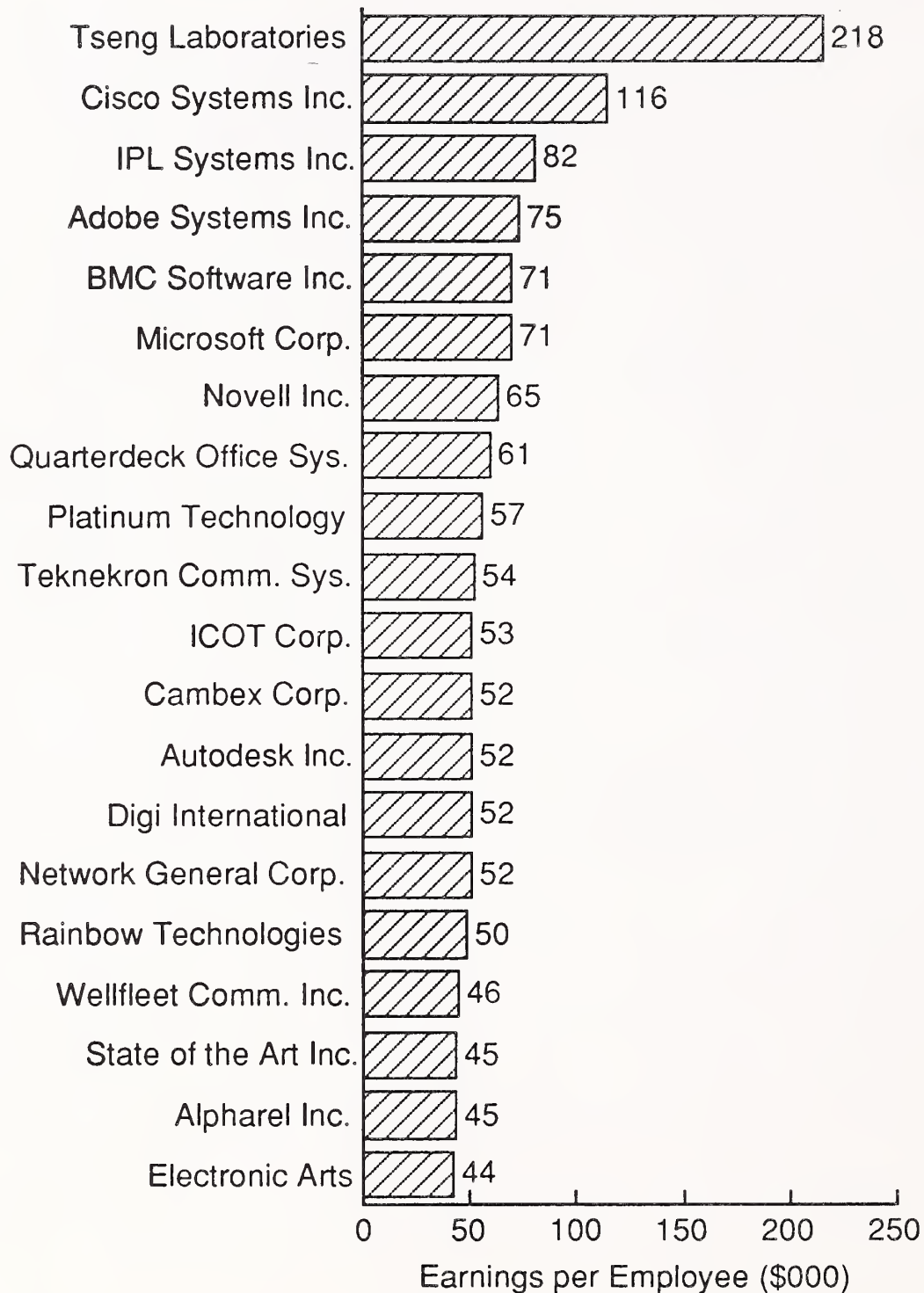
EXHIBIT II-12 (CONT.)

Revenue per Employee Leaders

Revenue/ Employee Rank	Company	Latest 4 Qtrs.		Rev. per Employee (\$000)	Segment Code
		Revenue (\$ Millions)	No. of Employees		
1	Acclaim Enmnt. Inc.	142	90	1,580	SOFT
2	Tseng Laboratories	61	45	1,356	CCMR
3	Quantum Corp.	1,074	1,445	743	CCMR
4	IPL Systems Inc.	60	114	530	CSMR
5	Mirror Technologies	18	35	514	CCMR
6	Cisco Systems Inc.	244	505	483	CCMR
7	Electronic Arts	142	300	473	SOFT
8	RasterOps	76	168	453	CCMR
9	Apple Computer	6,496	14,432	450	CSMR
10	Borland International	437	986	443	SFTP
11	Dell Computer Corp.	890	2,050	434	CSMR
12	Zeos Int'l Ltd.	231	549	421	CSMR
13	Tandon Corp.	461	1,155	399	CSMR
14	Osicom Technologies	41	105	386	CCMR
15	Network General Corp.	57	148	384	CSMR
16	Radius Inc.	125	347	359	CCMR
17	Cirrus Logic	167	478	349	CCMR
18	Adobe Systems Inc.	240	701	342	SFTP
19	Software Toolworks Inc.	90	268	334	SFTP
20	Compaq Computer	3,271	10,000	327	CSMR

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-13

Earnings per Employee Leaders

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-13 (CONT.)

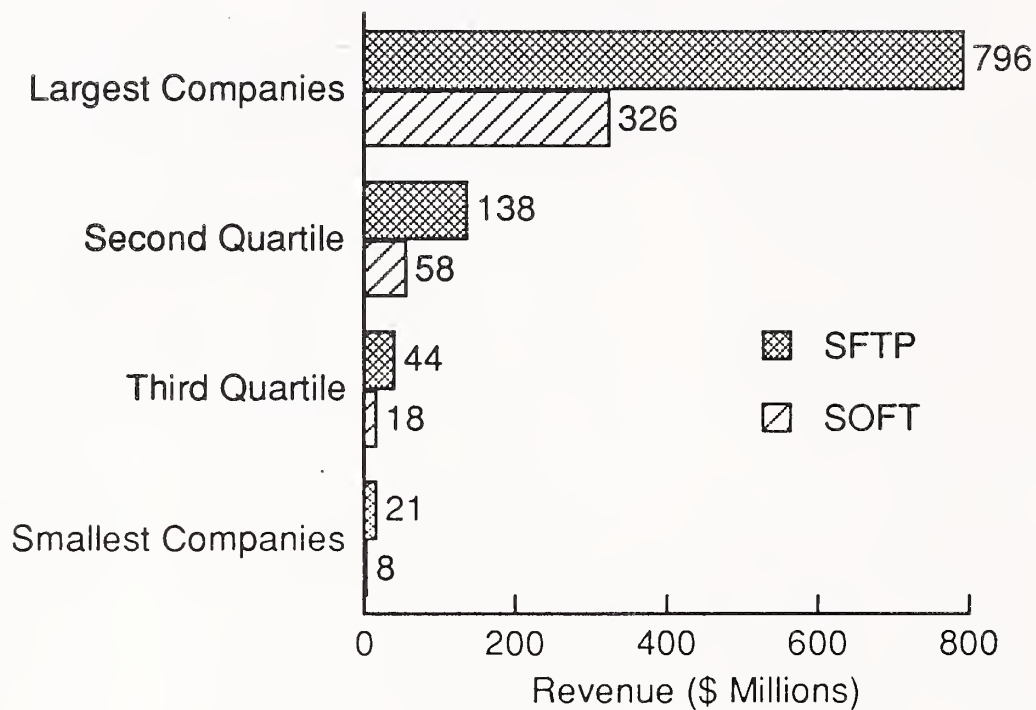
Earnings per Employee Leaders

Earnings/ Employee Rank	Company	Latest 4 Qtrs.		Earnings per Employee (\$000)	Segment Code
		Earnings (\$ Millions)	No. of Employees		
1	Tseng Laboratories	10	45	218	CCMR
2	Cisco Systems Inc.	59	505	116	CCMR
3	IPL Systems Inc.	9	114	82	CSMR
4	Adobe Systems Inc.	53	701	75	SFTP
5	BMC Software Inc.	42	593	71	SOFT
6	Microsoft Corp.	581	8,226	71	SFTP
7	Novell Inc.	184	2,843	65	SFTP
8	Quarterdeck Office Sys.	12	190	61	SFTP
9	Platinum Technology	5	90	57	SOFT
10	Teknekron Comm. Sys.	11	195	54	CCMR
11	ICOT Corp.	6	112	53	CCMR
12	Cambex Corp.	8	159	52	CCMR
13	Autodesk Inc.	58	1,102	52	SFTP
14	Digi International	9	166	52	CCMR
15	Network General Corp.	8	148	52	CSMR
16	Rainbow Technologies	3	68	50	SFTP
17	Wellfleet Comm. Inc.	10	212	46	CCMR
18	State of the Art Inc.	5	106	45	SFTP
19	Alpharel Inc.	1	31	45	CSMR
20	Electronic Arts	13	300	44	SOFT

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-14

Software Segment Comparison Revenue by Quartile

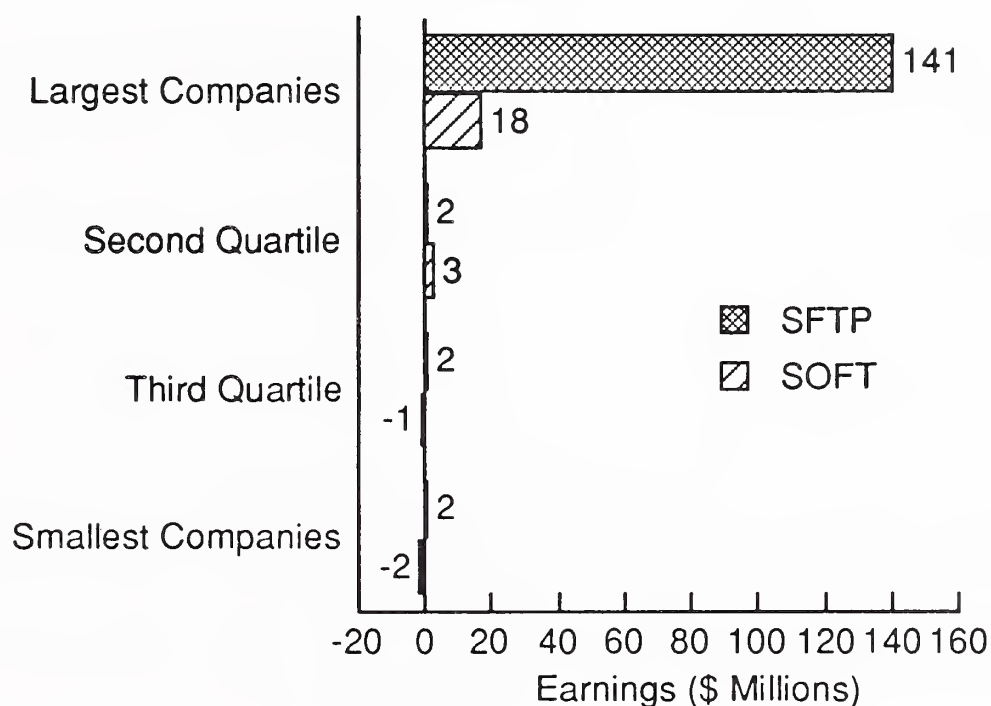


Company Size Grouping (Quartile)	Average Revenue (\$M) per Company		
	General Software	PC Software	Software Industry Avg.
Largest Companies	326	796	407
Second Quartile	58	138	72
Third Quartile	18	44	23
Smallest Companies	8	21	10
All Company Average	103	233	126

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-15

Software Segment Comparison Earnings by Quartile

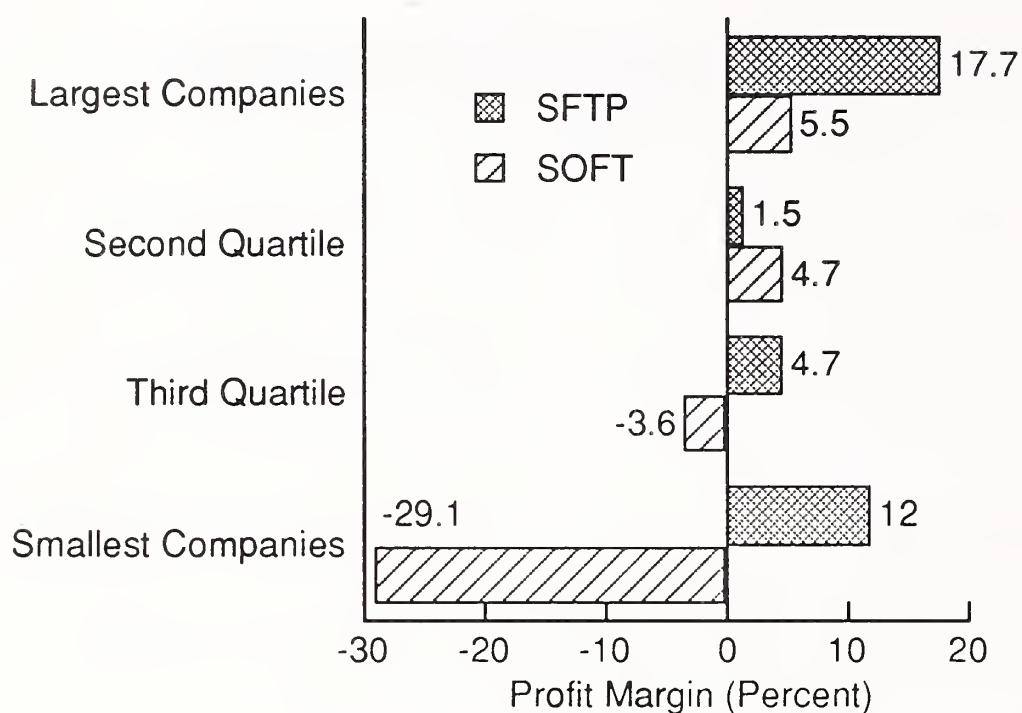


Company Size Grouping (Quartile)	Average Earnings (\$M) per Company		
	General Software	PC Software	Software Industry Avg.
Largest Companies	18	141	39
Second Quartile	3	2	3
Third Quartile	-1	2	0
Smallest Companies	-2	2	-1
All Company Average	4	35	10

Note: Based on available public data as of April 10, 1992.

EXHIBIT II-16

Software Segment Comparison Profit Margin by Quartile

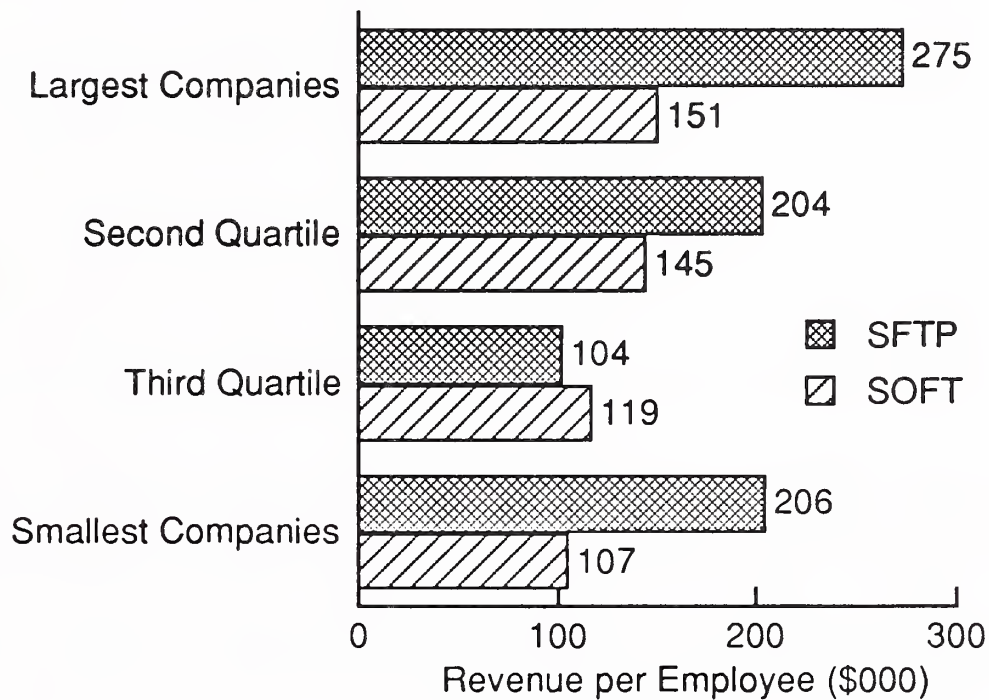


Company Size Grouping (Quartile)	Segment Profit Margin (Percent)		
	General Software	PC Software	Software Industry Avg.
Largest Companies	5.5	17.7	9.6
Second Quartile	4.7	1.5	3.6
Third Quartile	-3.6	4.7	-0.8
Smallest Companies	-29.1	12.0	-12.8
All Company Average	4.3	14.7	7.8

Note: Totals shown in this exhibit are only for those companies that reported earnings.
Based on available public data as of April 10, 1992.

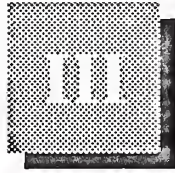
EXHIBIT II-17

Software Segment Comparison Revenue per Employee by Quartile



Company Size Grouping (Quartile)	Revenue per Employee (\$000)		
	General Software	PC Software	Software Industry Avg.
Largest Companies	151	275	179
Second Quartile	145	204	161
Third Quartile	119	104	113
Smallest Companies	107	206	132
All Company Average	147	244	171

Note: Industry totals adjusted for companies not reporting the number of employees.
Based on available public data as of April 10, 1992.



Software Products Companies

Software products companies (SOFT) earn the major share of their revenue from the development and marketing of software products and turnkey systems. This segment has the largest number of companies even without the PC software companies that now compose the SFTP segment.

The software segments enjoy the highest growth rates in the industry, and SOFT's 14% revenue growth is second only to the SFTP segment. It would be even higher except that 29% of the companies in the segment show declining revenues. Only one of the 10 largest companies (Cadence Design Systems) ranks in the top ten for revenue growth. The rest are scattered among the companies with revenues under \$55 million.

A look at profit margins shows that the top 16 companies also have above-average levels of revenue growth. At the other end of the scale, there are 40 companies (34%) with negative earnings and profit margins.

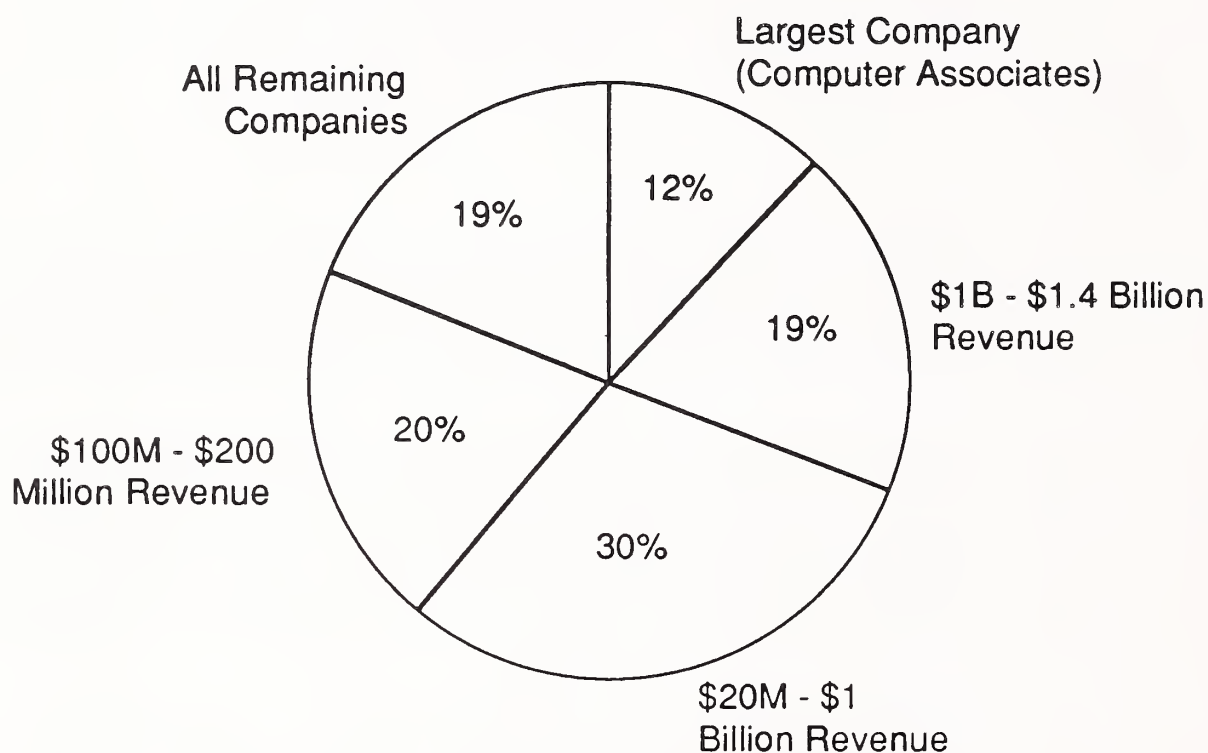
The SFTP segment has only one company with revenue below \$15 million; the SOFT segment has 39 companies (34%). These companies also have negative margins on average — both within the segment and relative to the smaller companies in other segments.

Companies that show strong performance relative to their size include Cabletron Systems, LEGENT Corp., and Platinum Technology.

The SOFT segment of general software companies enjoys strong revenue growth. The segment would show even better performance if the averages weren't bogged down by the large number of companies with negative earnings, declining growth rates and small revenues.

EXHIBIT III-1

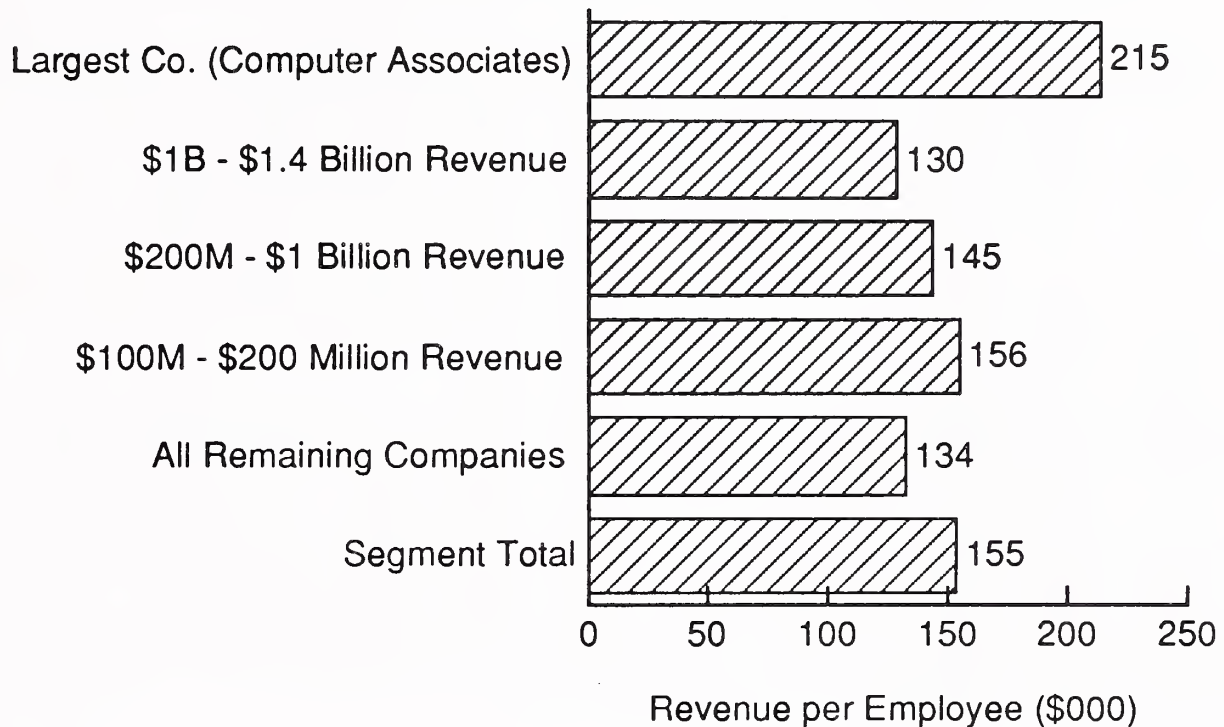
Software Products Companies (SOFT) Revenue Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Segment	Number of Companies
Largest Co. (Computer Associates)	1,438	12	1
\$1B - \$1.4 Billion Revenue	2,301	19	2
\$200M - \$1 Billion Revenue	3,561	30	11
\$100M - \$200 Million Revenue	2,381	20	17
All Remaining Companies	2,223	19	85
Segment Total	11,904	100	116

EXHIBIT III-2

Software Products Companies (SOFT) Revenue per Employee Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Number of Employees	Revenue per Employee (\$000)
Largest Co. (Computer Associates)	1,438	6,700	215
\$1B - \$1.4 Billion Revenue	2,301	17,766	130
\$200M - \$1 Billion Revenue	3,335	23,033	145
\$100M - \$200 Million Revenue	2,088	13,360	156
All Remaining Companies	2,139	16,011	134
Segment Total	11,301	76,870	147

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

EXHIBIT III-3

Software Products Companies (SOFT) Revenue Leaders

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Computer Associates	1,438	1,311	10
2	Intergraph Corp.	1,195	1,045	14
3	Oracle Systems Corp.	1,105	1,059	4
4	Reynolds & Reynolds	592	607	-3
5	Policy Mgmt. Systems	415	346	20
6	ASK Computer Systems	396	246	60
7	Cadence Design Systems	392	231	69
8	Teradata Corp.	297	238	25
9	Cabletron Systems	291	181	61
10	Bolt Beranek & Newman	263	266	-1

EXHIBIT III-4

Software Products Companies (SOFT) Revenue Growth Leaders

Revenue Growth Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Uniquist Inc.	10	3	212
2	AW Computer Systems	9	3	187
3	Medical Marketing Group	15	7	96
4	Inforum Inc.	7	3	95
5	Platinum Technology	29	15	90
6	Parametric Technology	52	29	78
7	Cadence Design Systems	392	231	69
8	Delphi Information Systems	39	24	67
9	Micro Healthsystems	16	10	65
10	Wasatch Education Systems	14	8	65

Note: Based on available public data as of April 10, 1992.

EXHIBIT III-5

Software Products Companies (SOFT) Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Computer Associates	173	162	7
2	Intergraph Corp.	71	63	14
3	Cabletron Systems	58	36	61
4	Policy Mgmt. Systems	48	37	28
5	BMC Software Inc.	42	23	82
6	Oracle Systems Corp.	38	24	61
7	LEGENT Corp.	36	35	4
8	Reynolds & Reynolds	27	23	17
9	American Software	20	17	17
10	Structural Dynamics Res.	19	14	36

EXHIBIT III-6

Software Products Companies (SOFT) Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Quarters		Profit Margin (Percent)
		Earnings (\$M)	Revenue (\$M)	
1	BMC Software Inc.	42	174	24.1
2	Parametric Technology	12	52	23.1
3	BGS Systems Inc.	6	25	22.8
4	Medical Marketing Group	3	15	21.2
5	Cabletron Systems	58	291	20.0
6	American Software	20	114	17.9
7	Inforum Inc.	2	7	17.7
8	Platinum Technology	5	29	17.7
9	LEGENT Corp.	36	208	17.4
10	GMIS Inc.	2	9	17.3

Note: Based on available public data as of April 10, 1992.

EXHIBIT III-7

Software Products Companies (SOFT) Revenue per Employee Leaders

Revenue/ Employee Rank	Company	Latest 4 Quarters		Revenue/ Employee (\$000)
		Revenue (\$M)	No. Employees	
1	Acclaim Enmnt. Inc.	142	90	1,580
2	Electronic Arts	142	300	473
3	Ultimate Corp.	159	494	322
4	Platinum Technology	29	90	320
5	BMC Software Inc.	174	593	294
6	AW Computer Systems	9	35	255
7	Group 1 Software Inc.	29	120	245
8	Cadence Design Systems	392	1,676	234
9	Proteon Inc.	95	406	233
10	Artisoft Inc.	54	248	219

EXHIBIT III-8

Software Products Companies (SOFT) Earnings per Employee Leaders

Earnings/ Employee Rank	Company	Latest 4 Quarters		Earnings/ Employee (\$000)
		Earnings (\$M)	No. Employees	
1	BMC Software Inc.	42	593	71
2	Platinum Technology	5	90	57
3	Electronic Arts	13	300	44
4	BGS Systems Inc.	6	132	44
5	Cabletron Systems	58	1,371	42
6	Parametric Technology	12	305	40
7	GMIS Inc.	2	61	38
8	Artisoft Inc.	9	248	38
9	Micro Healthsystems	3	79	35
10	Group 1 Software Inc.	4	120	33

Note: Earnings shown in this exhibit are only of those companies that reported number of employees. Based on available public data as of April 10, 1992.

EXHIBIT III-9

Software Products Companies (SOFT) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Computer Associates	1,438	10	173	12.0	215	1	67	1	17	11
Intergraph Corp.	1,195	14	71	5.9	116	2	60	2	39	68
Oracle Systems Corp.	1,105	4	38	3.5	148	3	74	6	57	41
Reynolds & Reynolds	592	-3	27	4.3	123	4	91	8	50	63
Policy Mgmt. Systems	415	20	48	11.5	94	5	51	4	20	90
ASK Computer Systems	396	60	-56	-14.2	185	6	12	115	95	20
Cadence Design Systems	392	69	-22	-5.5	234	7	7	113	84	8
Teradata Corp.	297	25	9	3.1	199	8	39	17	59	16
Cabletron Systems	291	61	58	20.0	212	9	11	3	5	12
Bolt Beranek & Newman	263	-1	7	1.9	115	10	85	21	63	70
Gerber Scientific Inc.	257	-8	7	2.9	151	11	95	20	60	35
Pansophic Systems	226	-1	9	4.0	N/A	12	83	18	53	113
Sterling Software Inc.	225	11	11	4.8	113	13	65	14	45	74
LEGENT Corp.	208	15	36	17.4	183	14	57	7	9	22
BMC Software Inc.	174	48	42	24.1	294	15	19	5	1	5
HBO & Co.	171	-2	-3	-1.7	87	16	88	98	77	95
Sybase Inc.	159	55	9	4.4	N/A	17	14	16	49	112
Ultimate Corp.	159	-19	-15	-9.4	322	18	103	112	90	3
Ingres Corp.	157	20	0	0.0	122	19	49	70	74	64
Structural Dynamics Res.	152	22	19	12.7	139	20	42	10	15	51
Acclaim Enmnt. Inc.	142	1	0	-0.1	1,580	21	80	76	75	1
Electronic Arts	142	47	13	9.3	473	22	20	11	26	2
Triad Systems Corp.	140	-2	2	1.7	104	23	89	47	65	83
Computer Data Systems	134	6	3	2.5	N/A	24	71	38	62	114
Cognos Inc.	132	16	6	4.9	129	25	56	23	44	57
Goal Systems Int'l	128	18	8	6.4	147	26	53	19	34	43
Systems Center Inc.	126	19	6	5.0	156	27	52	25	42	32
KnowledgeWare Inc.	125	36	6	4.9	149	28	29	26	43	38
Comshare Inc.	123	6	4	3.6	109	29	72	34	54	79
American Software	114	15	20	17.9	142	30	59	9	6	47
On-Line Software Int'l	101	13	5	4.5	143	31	62	32	46	45

EXHIBIT III-9 (CONT.)

Software Products Companies (SOFT) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Boole & Babbage Inc.	99	0	-10	-10.5	154	32	82	108	92	33
Landmark Graphics	97	26	12	11.9	193	33	35	13	18	17
Proteon Inc.	95	28	6	6.4	233	34	34	24	35	9
Interleaf Inc.	94	12	4	4.2	122	35	63	37	51	65
Cerner Corp.	77	51	5	6.1	180	36	17	31	38	23
Ross Systems Inc.	64	38	3	5.2	140	37	28	39	41	49
Auto-Trol Technology	64	-17	-7	-11.1	97	38	101	104	93	89
Progress Software	64	41	7	10.3	141	39	24	22	24	48
Hathaway Corp.	61	20	1	1.2	101	40	50	59	68	86
Marcam Corp.	60	25	6	9.2	127	41	38	28	27	59
Hogan Systems Inc.	57	42	4	8.7	157	42	23	35	29	31
MacNeal-Schwendler	56	-1	-3	-4.8	175	43	86	97	82	25
Artisoft Inc.	54	N/A	9	17.1	219	44	113	15	12	10
Parametric Technology	52	78	12	23.1	172	45	6	12	2	28
IIS Intelligent Info.	45	57	5	11.3	140	46	13	30	21	50
Viewlogic Systems Inc.	42	38	3	6.9	N/A	47	27	44	33	111
Sierra On-Line Inc.	41	41	5	10.9	101	48	25	33	22	87
Delphi Information Systems	39	67	-1	-2.4	149	49	8	83	78	39
IMRS Inc.	39	N/A	3	8.1	149	50	114	41	31	37
Bachman Info. Systems	39	N/A	2	4.1	136	51	115	46	52	53
PDA Engineering	37	3	3	8.4	149	52	75	43	30	36
Star Technologies	35	7	-1	-3.2	180	53	70	81	79	24
MPSI Systems	35	-7	-13	-18.7	73	54	94	111	97	106
Comnet Inc.	32	21	2	5.9	169	55	44	51	40	29
Consilium Inc.	32	3	1	3.5	121	56	77	56	55	66
Alias Research Inc.	30	53	-6	-20.9	184	57	16	101	99	21
Group 1 Software Inc.	29	21	4	13.6	245	58	45	36	14	7
Platinum Technology	29	90	5	17.7	320	59	5	29	8	4
Cybertek Corp.	28	-1	3	11.6	111	60	84	40	19	77
BGS Systems Inc.	25	13	6	22.8	192	61	61	27	3	18
Integrated Systems Inc.	25	34	-7	-29.3	199	62	30	105	107	15

EXHIBIT III-9 (CONT.)

Software Products Companies (SOFT) All Companies Ranked by Revenue

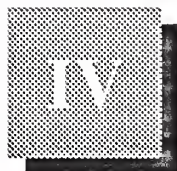
Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
XYVision Inc.	24	-18	-7	-29.6	112	63	102	103	108	75
ASA Int'l Ltd.	23	25	0	1.4	173	64	36	64	67	27
Scientific Software Intcrm.	23	21	-5	-20.2	108	65	47	99	98	80
Symix Systems Inc.	23	51	1	6.3	120	66	18	53	37	67
Medicus Systems Corp.	20	N/A	2	9.8	123	67	116	50	25	62
Medstat Systems Inc.	20	42	2	10.5	102	68	22	49	23	84
AlCorp Inc.	20	-12	-5	-27.9	133	69	98	100	105	55
Barrister Information Systems	19	-29	-7	-36.0	73	70	106	102	109	107
Perle Systems Ltd.	18	32	1	4.5	152	71	31	58	47	34
FDP Corp.	17	8	0	1.5	89	72	68	67	66	94
Cimflex Teknowledge	17	-47	-11	-61.7	83	73	110	109	111	96
Verdix Corp.	16	23	1	7.6	160	74	40	55	32	30
Micro Healthsystems	16	65	3	17.2	204	75	9	45	11	13
General Sciences Corp.	16	23	0	1.7	76	76	41	65	64	105
CMS/Data Corp.	15	25	0	0.8	76	77	37	69	70	103
Synercom Technology	15	17	-1	-8.7	101	78	54	89	89	85
Medical Marketing Group	15	96	3	21.2	N/A	79	3	42	4	109
Samna Corp.	14	39	-1	-8.5	114	80	26	86	88	71
Wasatch Education Systems	14	65	0	-7.1	108	81	10	79	86	81
General Computer Corp.	13	3	0	3.4	76	82	76	62	58	102
Timberline Software	13	0	0	0.1	N/A	83	81	74	73	115
Accugraph Corp.	13	10	-1	-5.0	149	84	66	80	83	40
Computrac Inc.	12	15	-1	-9.8	130	85	58	85	91	56
Infodata Systems Inc.	12	-2	0	0.2	76	86	87	72	72	104
Bishop Inc.	12	11	-1	-6.9	189	87	64	82	85	19
Intellicorp Inc.	12	-32	-13	-111.6	80	88	107	110	112	99
Quality Systems Inc.	11	-12	-1	-8.4	91	89	97	84	87	92
Integral Systems	10	-12	1	6.3	134	90	96	60	36	54
Uniquet Inc.	10	212	-1	-12.8	124	91	1	88	94	61
Mediagenic	10	-82	-24	-235.2	200	92	112	114	115	14
Silvar-Lisco	10	-13	-2	-21.4	125	93	99	94	100	60

EXHIBIT III-9 (CONT.)

Software Products Companies (SOFT)

All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Automatix Inc.	9	21	0	0.8	143	94	48	71	69	46
CE Software Holdings	9	32	1	13.8	115	95	32	54	13	69
Manatron Inc.	9	7	0	4.4	83	96	69	63	48	97
AW Computer Systems	9	187	N/A	N/A	255	97	2	116	116	6
Altai Inc.	9	21	0	-3.6	113	98	46	78	80	72
GMIS Inc.	9	47	2	17.3	145	99	21	48	10	44
Terrano Corp.	9	32	1	12.3	128	100	33	57	16	58
New Image Industries	8	-36	-10	-126.7	148	101	108	107	113	42
Develcon Electronics	8	-4	-1	-15.6	N/A	102	92	87	96	116
Intercim Corp.	8	2	0	-0.2	113	103	79	75	76	73
Blyth Holdings Inc.	7	54	-2	-27.5	77	104	15	93	103	101
Rabbit Software Corp.	7	-20	-3	-37.8	82	105	104	96	110	98
Convergent Solutions	7	17	-2	-27.6	89	106	55	95	104	93
Inforum Inc.	7	95	2	17.7	N/A	107	4	52	7	110
Fisher Business Systems	7	-28	-1	-22.5	92	108	105	90	101	91
CAM Data Systems	6	22	0	0.3	110	109	43	73	71	78
Script Systems Inc.	6	5	0	2.6	138	110	73	68	61	52
Authorized Distribution Network	6	-73	-9	-151.3	38	111	111	106	114	108
Penta Systems Int'l	6	-38	-2	-28.4	107	112	109	92	106	82
Dimensional Medicine	5	-14	-1	-26.7	98	113	100	91	102	88
Adv. Comp. Techniques	5	-2	0	-3.6	77	114	90	77	81	100
Rubicon Corp.	5	-6	1	8.7	112	115	93	61	28	76
Information Solutions	5	2	0	3.5	173	116	78	66	56	26



PC Software Products Companies

This chapter includes companies that earn the major share of their revenue from the development and marketing of software products and turnkey systems, primarily for the personal computer (PC) platform. This segment has only 26 companies, but its performance is far better than that of all other segments in term of revenue growth, revenue per employee, and profit margins. In addition, it runs a close second in overall earnings.

Unlike many other segments, the SFTP revenue leaders also frequently rank in the top ten of many other measures. Microsoft, Novell, Autodesk, Adobe, and Symantec Corp. all show up on at least four of the six lists of leaders. Other smaller companies that also appear on multiple lists include Quarterdeck and Rainbow Technologies.

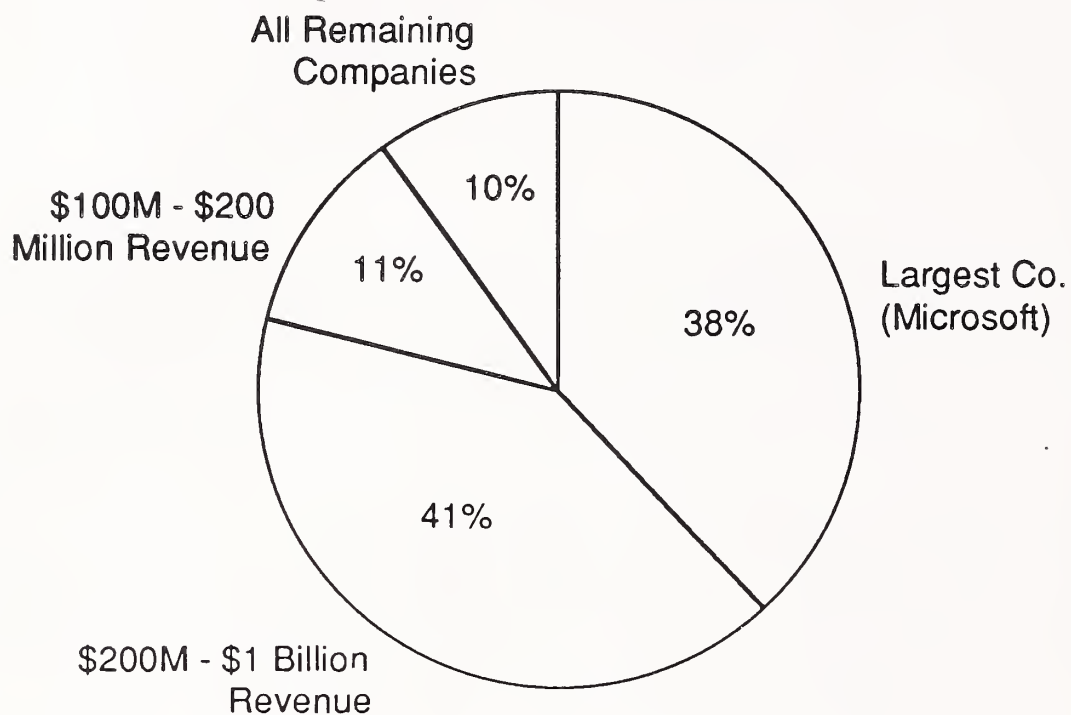
Only four companies in the segment declined in revenue. The remaining companies show revenue growth above 15%, with 35% as the segment's average.

Similarly, all but four of the PC software companies that reported the number of employees show a level of revenue per employee above the overall industry average of \$158,000. The SFTP segment average is much higher, at \$244,000 per employee.

In summary, the PC software segment (SFTP) is the most successful of all the segments in the *Computer Industry Financial Watch* in terms of revenue growth, revenue per employee, and profit margins. Individual company revenues may not be as high as the industry leaders (although Microsoft ranks ninth in the top 20); but the companies of SFTP stand out where it counts—in profitability and growth.

EXHIBIT IV-1

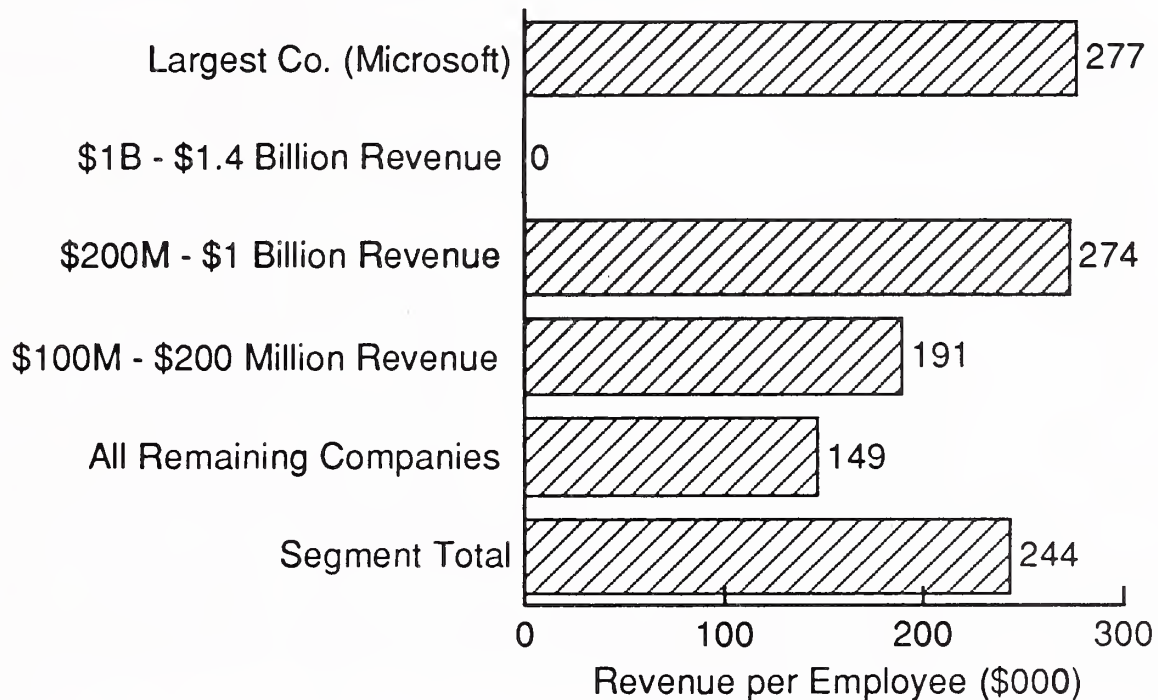
PC Software Products Companies (SFTP) Revenue Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Segment	Number of Companies
Largest Co. (Microsoft)	2,276	38	1
\$1B - 1.4 Billion Revenue	0	0	0
\$200M - \$1 Billion Revenue	2,500	41	5
\$100M - \$200 Million Revenue	673	11	4
All Remaining Companies	607	10	16
Segment Total	6,056	100	26

EXHIBIT IV-2

PC Software Products Companies (SFTP) Revenue per Employee Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs.		Revenue per Employee (\$000)
	Revenue (\$M)	Number of Employees	
Largest Co. (Microsoft)	2,276	8,226	277
\$1B - \$1.4 Billion Revenue	0	0	0
\$200M - \$1 Billion Revenue	2,500	9,132	274
\$100M - \$200 Million Revenue	673	3,519	191
All Remaining Companies	571	3,836	149
Segment Total	6,020	24,713	244

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

EXHIBIT IV-3

**PC Software Products Companies (SFTP)
Revenue Leaders**

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Microsoft Corp.	2,276	1,478	54
2	Lotus Development Corp.	829	692	20
3	Novell Inc.	710	526	35
4	Borland International	437	356	23
5	Autodesk Inc.	285	238	20
6	Adobe Systems Inc.	240	184	30
7	Symantec Corp.	184	110	67
8	Informix Corp.	180	146	23
9	Aldus Corp.	168	135	24
10	Software Publishing	141	153	-8

EXHIBIT IV-4

**PC Software Products Companies (SFTP)
Revenue Growth Leaders**

Revenue Growth Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Spinnaker Software	26	11	136
2	Symantec Corp.	184	110	67
3	Bloc Dev Corp.	43	26	65
4	Easel Corp.	28	17	64
5	Microsoft Corp.	2,276	1,478	54
6	Micrografx Inc.	40	26	50
7	Phoenix Technologies	58	39	49
8	Edmark Corp.	5	4	39
9	Rainbow Technologies	19	14	39
10	Quarterdeck Office Systems	50	36	38

Note: Based on available public data as of April 10, 1992.

EXHIBIT IV-5

PC Software Products Companies (SFTP) Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Microsoft Corp.	581	356	64
2	Novell Inc.	184	110	68
3	Autodesk Inc.	58	57	2
4	Adobe Systems Inc.	53	42	24
5	Lotus Development Corp.	43	23	85
6	Aldus Corp.	24	24	0
7	Symantec Corp.	17	6	178
8	Informix Corp.	13	-46	127
9	Quarterdeck Office Systems	12	11	9
10	Broderbund Software	8	N/A	N/A

EXHIBIT IV-6

PC Software Products Companies (SFTP) Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Quarters		Profit Margin (Percent)
		Earnings (\$M)	Revenue (\$M)	
1	Novell Inc.	184	710	25.9
2	Microsoft Corp.	581	2276	25.5
3	State of the Art Inc.	5	19	25.2
4	Quarterdeck Office Systems	12	50	23.2
5	Adobe Systems Inc.	53	240	21.9
6	Autodesk Inc.	58	285	20.3
7	Rainbow Technologies	3	19	18.1
8	Caere Corp.	6	32	17.6
9	Aldus Corp.	24	168	14.2
10	Easel Corp.	4	28	13.8

Note: Based on available public data as of April 10, 1992.

EXHIBIT IV-7

**PC Software Products Companies (SFTP)
Revenue per Employee Leaders**

Revenue/ Employee Rank	Company	Latest 4 Quarters		Revenue/ Employee (\$000)
		Revenue (\$M)	No. Employees	
1	Borland International	437	986	443
2	Adobe Systems Inc.	240	701	342
3	Software Toolworks Inc.	90	268	334
4	Symantec Corp.	184	600	307
5	Rainbow Technologies	19	68	279
6	Microsoft Corp.	2,276	8,226	277
7	Quarterdeck Office Systems	50	190	263
8	Autodesk Inc.	285	1102	259
9	Novell Inc.	710	2843	250
10	Broderbund Software	66	271	245

EXHIBIT IV-8

**PC Software Products Companies (SFTP)
Earnings per Employee Leaders**

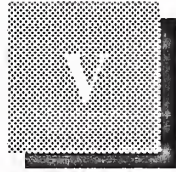
Earnings/ Employee Rank	Company	Latest 4 Quarters		Earnings/ Employee (\$000)
		Earnings (\$M)	No. Employees	
1	Adobe Systems Inc.	53	701	75
2	Microsoft Corp.	581	8,226	71
3	Novell Inc.	184	2,843	65
4	Quarterdeck Office Systems	12	190	61
5	Autodesk Inc.	58	1,102	52
6	Rainbow Technologies	3	68	50
7	State of the Art Inc.	5	106	45
8	Caere Corp.	6	139	41
9	Broderbund Software	8	271	31
10	Easel Corp.	4	143	31

Note: Earnings shown in this exhibit are only of those companies that reported number of employees. Based on available public data as of April 10, 1992.

EXHIBIT IV-9

PC Software Products Companies (SFTP) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Microsoft Corp.	2,276	54	581	25.5	277	1	5	1	2	6
Lotus Development	829	20	43	5.2	237	2	17	5	16	11
Novell Inc.	710	35	184	25.9	250	3	11	2	1	9
Borland International	437	23	-75	-17.2	443	4	15	25	24	1
Autodesk Inc.	285	20	58	20.3	259	5	16	3	6	8
Adobe Systems Inc.	240	30	53	21.9	342	6	12	4	5	2
Symantec Corp.	184	67	17	9.2	307	7	2	7	13	4
Informix Corp.	180	23	13	6.8	145	8	14	8	14	22
Aldus Corp.	168	24	24	14.2	176	9	13	6	9	21
Software Publishing	141	-8	-20	-14.4	195	10	22	23	22	16
Software Toolworks Inc.	90	15	-29	-32.7	334	11	20	24	25	3
Broderbund Software	66	N/A	8	12.6	245	12	25	10	11	10
Phoenix Technologies	58	49	0	-0.2	188	13	7	18	18	18
Quarterdeck Office Systems	50	38	12	23.2	263	14	10	9	4	7
Wicat Systems Inc.	45	-13	-1	-2.6	90	15	23	20	20	24
Bloc Dev. Corp.	43	65	-2	-5.0	189	16	3	21	21	17
Micrografx Inc.	40	50	4	11.0	177	17	6	14	12	20
Microprose Inc.	36	N/A	N/A	N/A	N/A	18	26	26	26	26
SCS/Compute Inc.	34	-6	0	-0.8	30	19	21	19	19	25
Caere Corp.	32	17	6	17.6	233	20	19	11	8	12
Easel Corp.	28	64	4	13.8	199	21	4	13	10	15
Spinnaker Software	26	136	1	4.7	224	22	1	16	17	13
State of the Art Inc.	19	18	5	25.2	180	23	18	12	3	19
Rainbow Technologies	19	39	3	18.1	279	24	9	15	7	5
Meca Software Inc.	15	-14	-3	-16.7	141	25	24	22	23	23
Edmark Corp.	5	39	0	5.4	203	26	8	17	15	14



Professional Services Companies

Professional services companies (PROF) earn the major share of their revenue by providing systems integration and professional services within the computer industry. These services can include consulting, systems development, education and training. Many of the larger professional services firms are not included here because they are not public companies (e.g., Price Waterhouse & Andersen Consulting), or because their primary revenue sources place them in other segments (e.g., IBM and EDS).

Professional services are labor intensive and generally do not include the sale of software products or computer systems. The average revenue per employee is lower for this segment than for any other; and only four of the 25 companies rated above the all industry average of \$158,000 per employee.

The PROF profit margin average was lowest among the segments that had non-negative profit margins. This rating was made significantly worse by the negative earnings of SHL Systemhouse and Intelogic Trace.

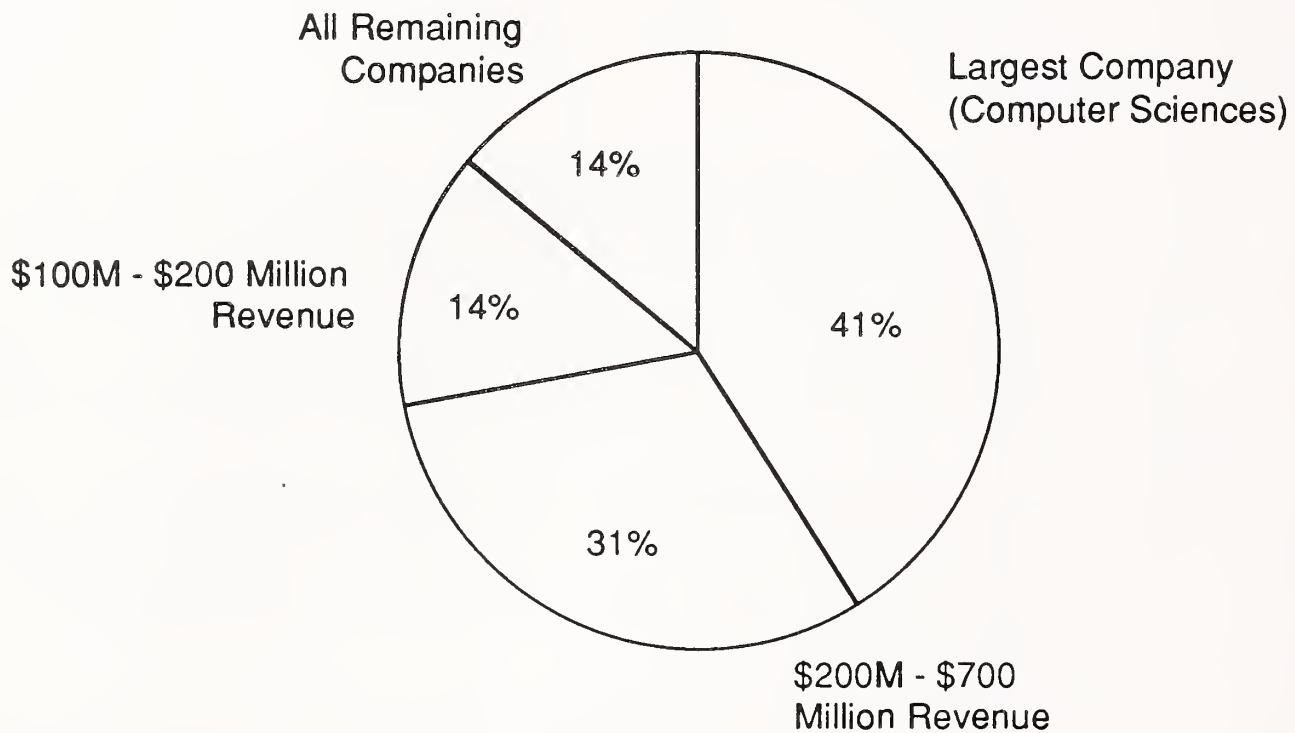
Star performers include System Software Associates and Continuum, which ranked in the top ten for all the measures charted. Systems and Computer Technology, Technology Solutions, and Intermetrics all ranked in the top 10 earnings performers—even though they weren't among the top revenue performers. All three had a sufficiently strong performance to rank in the top 10 of two other measures.

The two leaders in revenue growth appear to be pulling themselves up by the bootstraps since they also have the lowest revenues in the segment.

Overall, the PROF segment showed low profit margins and revenue per employee, but at least its average earnings were positive.

EXHIBIT V-1

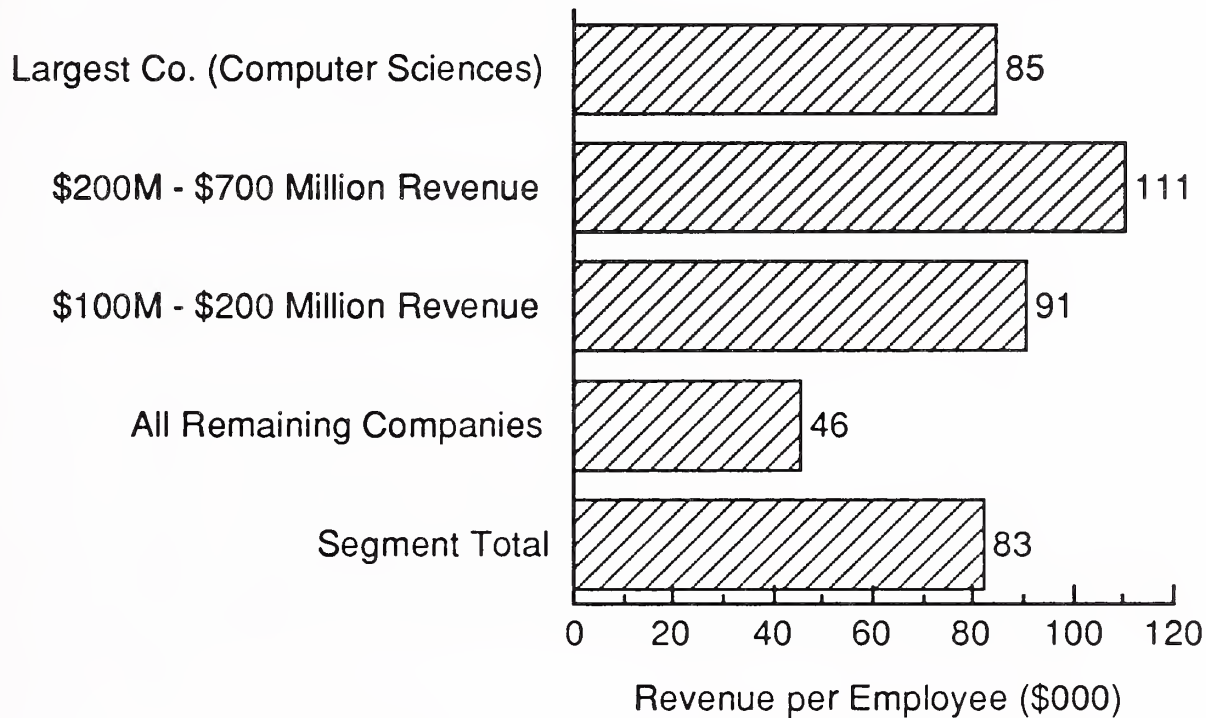
Professional Services Companies (PROF) Revenue Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Segment	Number of Companies
Largest Co. (Computer Sciences)	1,945	41	1
\$200M - \$700 Million Revenue	1,470	31	4
\$100M - \$200 Million Revenue	677	14	5
All Remaining Companies	651	14	15
Segment Total	4,743	100	25

EXHIBIT V-2

Professional Services Companies (PROF) Revenue per Employee Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs.		Revenue per Employee (\$000)
	Revenue (\$M)	Number of Employees	
Largest Co. (Computer Sciences)	1,945	22,900	85
\$200M - \$700 Million Revenue	1,470	13,283	111
\$100M - \$200 Million Revenue	677	7,458	91
All Remaining Companies	609	13,187	46
Segment Total	4,701	56,828	83

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

EXHIBIT V-3

Professional Services Companies (PROF) Revenue Leaders

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Computer Sciences	1,945	1,679	16
2	SHL Systemhouse	614	606	1
3	Logicon Inc.	286	256	12
4	American Mgmt. Systems	285	262	9
5	Computer Task Group	285	244	17
6	System Software Assoc.	171	136	26
7	CACI Int'l Inc.	135	148	-9
8	Continuum Inc.	128	97	32
9	Intellogic Trace Inc.	124	126	-1
10	Analysts International	120	114	5

EXHIBIT V-4

Professional Services Companies (PROF) Revenue Growth Leaders

Revenue Growth Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Summa Medical Corp.	7	0	4,287
2	Mediware Info. Systems	7	4	61
3	Systems & Comp. Tech.	70	49	44
4	Continuum Inc.	128	97	32
5	Ametech Inc.	11	8	29
6	System Software Assoc.	171	136	26
7	Comptek Research	62	51	21
8	Computer Task Group	285	244	17
9	Intermetrics Inc.	61	52	16
10	Computer Sciences	1,945	1,679	16

Note: Based on available public data as of April 10, 1992.

EXHIBIT V-5

Professional Services Companies (PROF) Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Computer Sciences	66	68	-4
2	System Software Assoc.	21	20	3
3	American Mgmt. Systems	13	12	9
4	Logicon Inc.	12	9	44
5	Technology Solutions	11	N/A	N/A
6	Continuum Inc.	8	8	0
7	Keane Inc.	6	5	8
8	Systems & Comp. Tech.	6	0	1,085
9	Analysts International	5	6	-16
10	Intermetrics Inc.	2	2	0

EXHIBIT V-6

Professional Services Companies (PROF) Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Quarters		Profit Margin (Percent)
		Earnings (\$M)	Revenue (\$M)	
1	Technology Solutions	11	63	16.8
2	System Software Assoc.	21	171	12.1
3	Technalysis Corp.	2	18	10.2
4	Barra Inc.	2	31	6.2
5	Keane Inc.	6	96	6.2
6	Continuum Inc.	8	128	6.1
7	Systems & Comp. Tech.	6	70	5.5
8	Brandon Systems Corp.	2	38	5.5
9	American Mgmt. Systems	13	285	4.6
10	Analysts International	5	120	4.3

Note: Based on available public data as of April 10, 1992.

EXHIBIT V-7

Professional Services Companies (PROF) Revenue per Employee Leaders

Revenue/ Employee Rank	Company	Latest 4 Quarters		Revenue/ Employee (\$000)
		Revenue (\$M)	No. Employees	
1	Summa Medical Corp.	7	33	221
2	System Software Assoc.	171	781	219
3	SHL Systemhouse	614	2,867	214
4	Technology Solutions	63	325	194
5	Mediware Info. Systems	7	47	152
6	Continuum Inc.	128	1,150	111
7	Intermetrics Inc.	61	610	100
8	Comptek Research	62	619	99
9	Logicon Inc.	286	3,157	91
10	Softech Inc.	52	574	90

EXHIBIT V-8

Professional Services Companies (PROF) Earnings per Employee Leaders

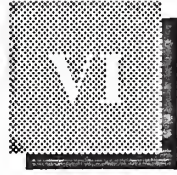
Earnings/ Employee Rank	Company	Latest 4 Quarters		Earnings/ Employee (\$000)
		Earnings (\$M)	No. Employees	
1	Technology Solutions	11	325	33
2	System Software Assoc.	21	781	27
3	Technalysis Corp.	2	269	7
4	Continuum Inc.	8	1,150	7
5	Systems & Comp. Tech.	6	1,050	6
6	Keane Inc.	6	1,358	4
7	American Mgmt. Systems	13	3,200	4
8	Logicon Inc.	12	3,157	4
9	Intermetrics Inc.	2	610	4
10	Analysts International	5	1,750	3

Note: Earnings shown in this exhibit are only of those companies that reported number of employees. Based on available public data as of April 10, 1992.

EXHIBIT V-9

Professional Services Companies (PROF) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Computer Sciences	1,945	16	66	3.4	85	1	10	1	13	12
SHL Systemhouse	614	1	-21	-3.4	214	2	19	25	23	3
Logicon Inc.	286	12	12	4.3	91	3	11	4	11	9
American Mgmt. Systems	285	9	13	4.6	89	4	13	3	9	11
Computer Task Group	285	17	1	0.3	70	5	8	17	21	16
System Software Assoc.	171	26	21	12.1	219	6	6	2	2	2
CACI Int'l Inc.	135	-9	2	1.5	60	7	22	13	19	20
Continuum Inc.	128	32	8	6.1	111	8	4	6	6	6
Intellogic Trace Inc.	124	-1	-19	-16.2	82	9	20	24	24	13
Analysts International	120	5	5	4.3	68	10	15	9	10	18
Keane Inc.	96	3	6	6.2	71	11	17	7	5	15
Computer Horizons	95	-5	2	2.4	75	12	21	11	16	14
Systems & Comp. Tech.	70	44	6	5.5	67	13	3	8	7	19
Technology Solutions	63	N/A	11	16.8	194	14	24	5	1	4
Comptek Research	62	21	2	2.7	99	15	7	16	15	8
Intermetrics Inc.	61	16	2	3.8	100	16	9	10	12	7
Softech Inc.	52	2	-2	-3.1	90	17	18	22	22	10
Brandon Systems Corp.	38	3	2	5.5	6	18	16	12	8	23
Hadron Inc.	32	5	1	1.7	47	19	14	18	18	22
Barra Inc.	31	N/A	2	6.2	N/A	20	25	14	4	24
Technalysis Corp.	18	-10	2	10.2	68	21	23	15	3	17
Ametech Inc.	11	29	0	2.8	N/A	22	5	19	14	25
National Techteam	8	9	0	0.7	53	23	12	21	20	21
Summa Medical Corp.	7	4,287	-8	-93.8	221	24	1	23	25	1
Mediware Info. Systems	7	61	0	1.9	152	25	2	20	17	5



Processing/Network Services Companies

This chapter includes companies that earn the major share of their revenue from services that:

- Process information
- Manage and support computer operations (systems operations)
- Provide value-added network and related network-based applications
- Provide on-line information sources and services (electronic information services)

These companies typically have a major investment in computer and network equipment and provide an alternative to internal data centers and private company networks.

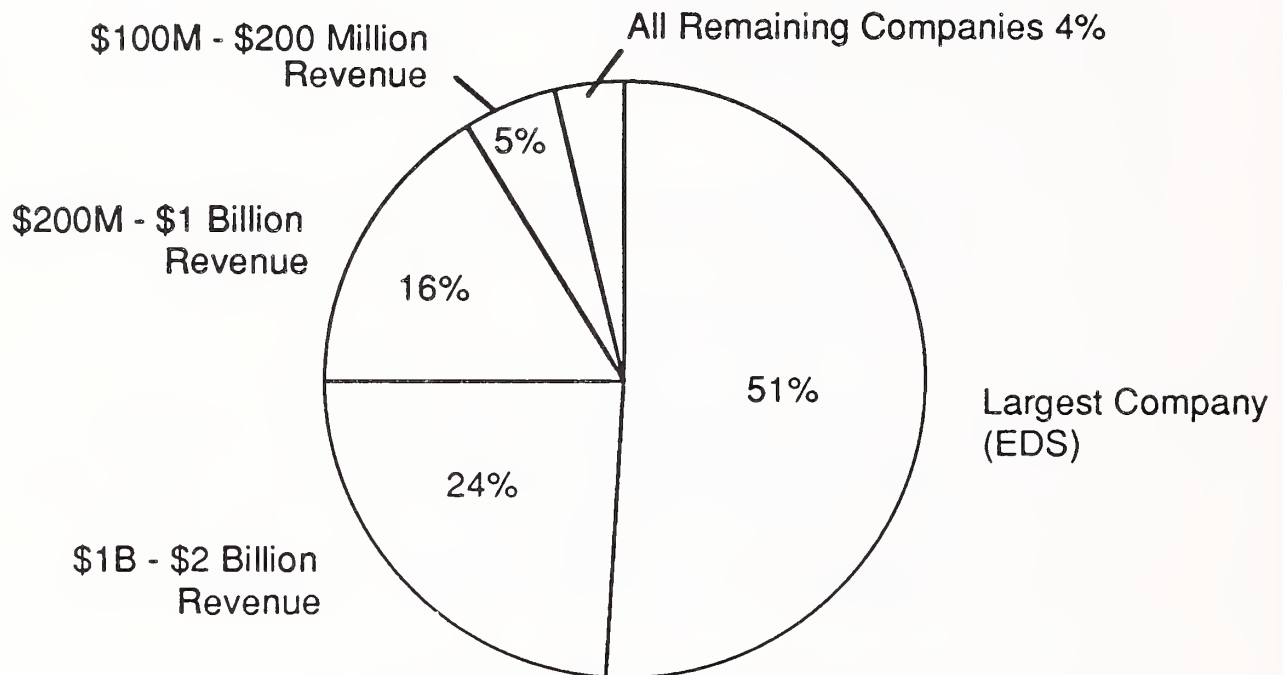
This is the only segment that has increased its revenue growth rate since the last issue of *Computer Industry Financial Watch*. This can be attributed partly to the fact that four of the largest 10 companies (including EDS, the largest) ranked among the top revenue growth leaders. (In many other segments, there is only one company).

Eight of the largest 10 companies are also earnings leaders, with Control Data as the exception, ranking at the bottom of the earnings list and being the only company to show negative earnings. This segment's profit margin leaders are all above the segment average and above the average for all other segments except PC software.

There are many strong performers in this segment, including EDS (which accounts for 51% of the segment), GTECH Corp., Sungard Data Systems, Anacomp, FIserv, SEI Corp, Total System Services, Concord Computing, and Autoinfo, Inc. The top 10 companies dominate the rankings, but many others make a strong showing in this segment.

EXHIBIT VI-1

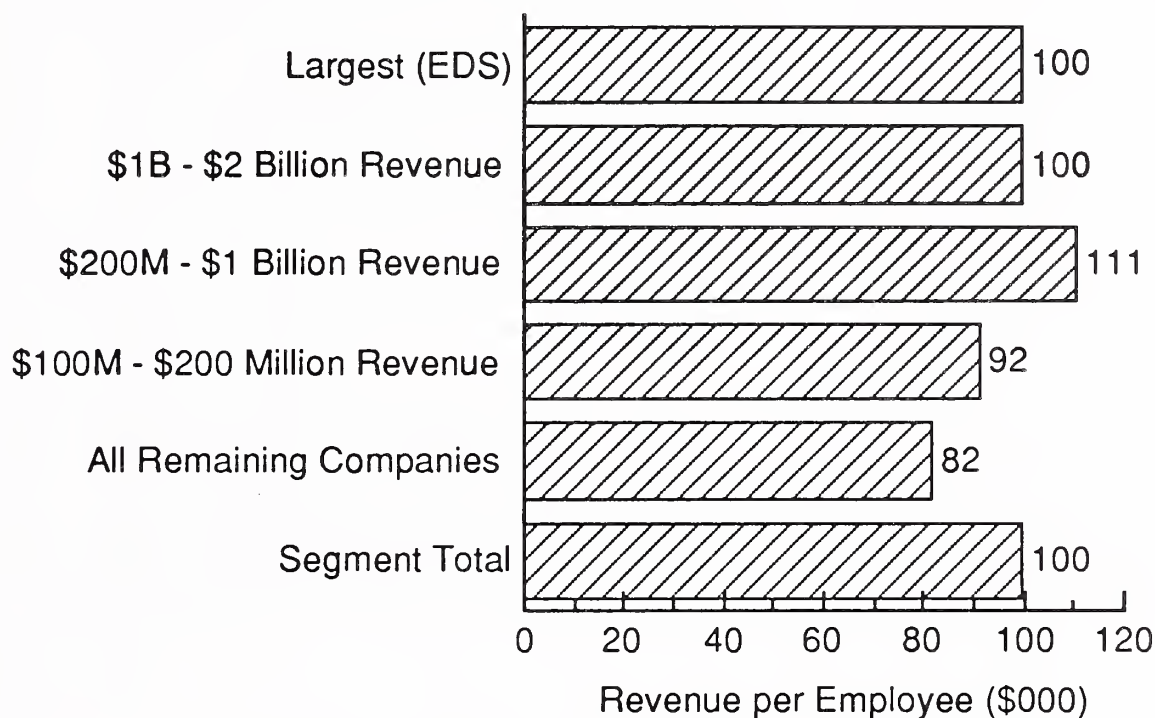
Processing/Network Services Companies (PROC) Revenue Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Segment	Number of Companies
Largest Co. (EDS)	7,029	51	1
\$1B - \$2 Billion Revenue	3,336	24	2
\$200M - \$1 Billion Revenue	2,157	16	6
\$100M - \$200 Million Revenue	758	5	5
All Remaining Companies	487	4	17
Segment Total	13,767	100	31

EXHIBIT VI-2

Processing/Network Services Companies (PROC) Revenue per Employee Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs		Revenue per Employee (\$000)
	Revenue (\$M)	Number of Employees	
Largest Co. (EDS)	7,029	70,500	100
\$1B - \$2 Billion Revenue	3,335	33,500	100
\$200M - \$1 Billion Revenue	1,718	15,509	111
\$100M - \$200 Million Revenue	758	8,195	92
All Remaining Companies	446	5,413	82
Segment Total	13,286	133,117	100

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

EXHIBIT VI-3

Processing/Network Services Companies (PROC) Revenue Leaders

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Electronic Data Systems	7,029	6,022	17
2	Automatic Data Proc.	1,811	1,736	4
3	Control Data Corp.	1,525	1,691	-10
4	Anacomp Inc.	625	662	-6
5	Shared Medical Systems	439	403	9
6	GTECH Corp.	321	252	27
7	Sungard Data Systems	284	262	8
8	Flserv Inc.	281	183	54
9	Information Resources	208	167	25
10	SEI Corp.	188	167	12

EXHIBIT VI-4

Processing/Network Services Companies (PROC) Revenue Growth Leaders

Revenue Growth Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Flserv Inc.	281	183	54
2	Warner Insurance Svcs.	63	47	35
3	Delta Computec Inc.	9	7	30
4	Concord Computing	51	40	29
5	GTECH Corp.	321	252	27
6	Total System Services	117	92	27
7	Autoinfo Inc.	12	9	25
8	Information Resources	208	167	25
9	Data Transmission Net	21	18	20
10	Electronic Data Systems	7,029	6,007	17

Note: Based on available public data as of April 10, 1992.

EXHIBIT VI-5

Processing/Network Services Companies (PROC) Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Electronic Data Systems	548	497	10
2	Automatic Data Proc.	239	220	9
3	Anacomp Inc.	28	11	158
4	Shared Medical Systems	25	23	12
5	Sungard Data Systems	21	20	5
6	Fiserv Inc.	18	14	33
7	Total System Services	16	13	21
8	Information Resources	14	3	402
9	GTECH Corp.	13	-5	395
10	Paychex Inc.	12	9	31

EXHIBIT VI-6

Processing/Network Services Companies (PROC) Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Quarters		Profit Margin (Percent)
		Earnings (\$M)	Revenue (\$M)	
1	Envoy Corp.	7	30	21.8
2	Concord Computing	7	51	14.5
3	Henry (Jack) & Assoc.	3	21	13.6
4	Total System Services	16	117	13.4
5	Automatic Data Proc.	239	1811	13.2
6	Autoinfo Inc.	2	12	12.0
7	SEI Corp.	12	188	8.5
8	Electronic Data Systems	548	7029	8.0
9	Paychex Inc.	12	154	8.0
10	Sungard Data Systems	21	284	7.6

Note: Based on available public data as of April 10, 1992.

EXHIBIT VI-7

Processing/Network Services Companies (PROC) Revenue per Employee Leaders

Revenue/ Employee Rank	Company	Latest 4 Quarters		Revenue/ Employee (\$000)
		Revenue (\$M)	No. Employees	
1	Autoinfo Inc.	12	50	232
2	Henry (Jack) & Assoc.	21	108	192
3	Sungard Data Systems	284	1,640	173
4	GTECH Corp.	321	1,890	170
5	Envoy Corp.	30	183	164
6	Warner Insurance Svcs.	63	458	138
7	Anacomp Inc.	625	4,600	136
8	Concord Computing	51	392	130
9	SEI Corp.	188	1,485	126
10	TSR Inc.	13	106	121

EXHIBIT VI-8

Processing/Network Services Companies (PROC) Earnings Per Employee Leaders

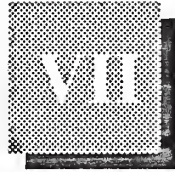
Earnings/ Employee Rank	Company	Latest 4 Quarters		Earnings/ Employee (\$000)
		Earnings (\$M)	No. Employees	
1	Envoy Corp.	7	183	36
2	Autoinfo Inc.	2	50	30
3	Henry (Jack) & Assoc.	3	108	26
4	Concord Computing	7	392	19
5	Sungard Data Systems	21	1,640	13
6	Automatic Data Proc.	239	19,000	13
7	Total System Services	16	1,264	12
8	SEI Corp.	12	1,485	8
9	Electronic Data Systems	548	70,500	8
10	GTECH Corp.	13	1,890	7

Note: Earnings shown in this exhibit are only of those companies that reported number of employees. Based on available public data as of April 10, 1992.

EXHIBIT VI-9

Processing/Network Services Companies (PROC) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Electronic Data Systems	7,029	17	548	8.0	100	1	10	1	8	14
Automatic Data Proc.	1,811	4	239	13.2	95	2	20	2	5	15
Control Data Corp.	1,525	-10	-10	-0.6	105	3	28	30	27	13
Anacomp Inc.	625	-6	28	3.2	136	4	27	3	20	7
Shared Medical Systems	439	9	25	5.8	N/A	5	18	4	15	N/A
GTECH Corp.	321	27	13	4.1	170	6	5	9	16	4
Sungard Data Systems	284	8	21	7.6	173	7	19	5	10	3
Flserv Inc.	281	54	18	6.5	76	8	1	6	13	19
Information Resources	208	25	14	6.9	56	9	8	8	11	25
SEI Corp.	188	12	12	8.5	126	10	15	11	7	9
Banctec Inc.	183	-3	11	6.0	107	11	25	12	14	12
Paychex Inc.	154	16	12	8.0	67	12	13	10	9	21
Total System Services	117	27	16	13.4	92	13	6	7	4	16
Comp Language Res.	116	-3	4	3.3	81	14	24	15	19	17
Acxiom Corp.	89	-10	1	1.4	58	15	29	21	24	24
Cycare Systems Inc.	74	-4	1	0.8	63	16	26	23	25	23
Warner Insurance Svcs.	63	35	2	3.1	138	17	2	17	21	6
Concord Computing	51	29	7	14.5	130	18	4	13	2	8
Wiland Services Inc.	35	17	1	3.9	109	19	11	20	17	11
Envoy Corp.	30	10	7	21.8	164	20	17	14	1	5
Saztec International	24	16	0	-1.8	42	21	12	29	29	27
Data Transmission Net	21	20	1	6.6	N/A	22	9	19	12	N/A
Henry (Jack) & Assoc.	21	12	3	13.6	192	23	16	16	3	2
Information America	16	13	1	3.9	N/A	24	14	22	18	N/A
TSR Inc.	13	-23	0	0.6	121	25	30	26	26	10
Autoinfo Inc.	12	25	2	12.0	232	26	7	18	6	1
Auto Graphics Inc.	10	-1	0	-0.7	68	27	22	27	28	20
Sandata Inc.	10	2	1	1.7	66	28	21	24	23	22
Delta Computec Inc.	9	30	0	2.8	80	29	3	25	22	18
Pay-Fone Systems Inc.	5	-3	0	-6.7	54	30	23	28	30	26



Computer Systems Manufacturers

Computer systems manufacturers (CSMR) earn the major share of their revenue from the manufacture and distribution of complete computer systems. CSMR is the largest segment; it also has the largest problems in terms of revenues, earnings and profit margins.

This is the only segment to show an overall decline in revenue. The decline is spread throughout CSMR, with 26 of the 53 companies reporting decreased revenues. The problem is persistent, since 25 companies were listed with revenue declines in the last issue of the *Computer Industry Financial Watch*.

Bad news in earnings accompanies the bad news in revenue. Twenty-four CSMR companies show negative earnings and margins, and two-thirds of them also decline in revenue. IBM, the largest company, led with the largest earnings loss. Nevertheless, IBM's share of the CSMR segment revenues increased by two percent. Even three of the 10 companies listed as earnings leaders show declining earnings from a year ago.

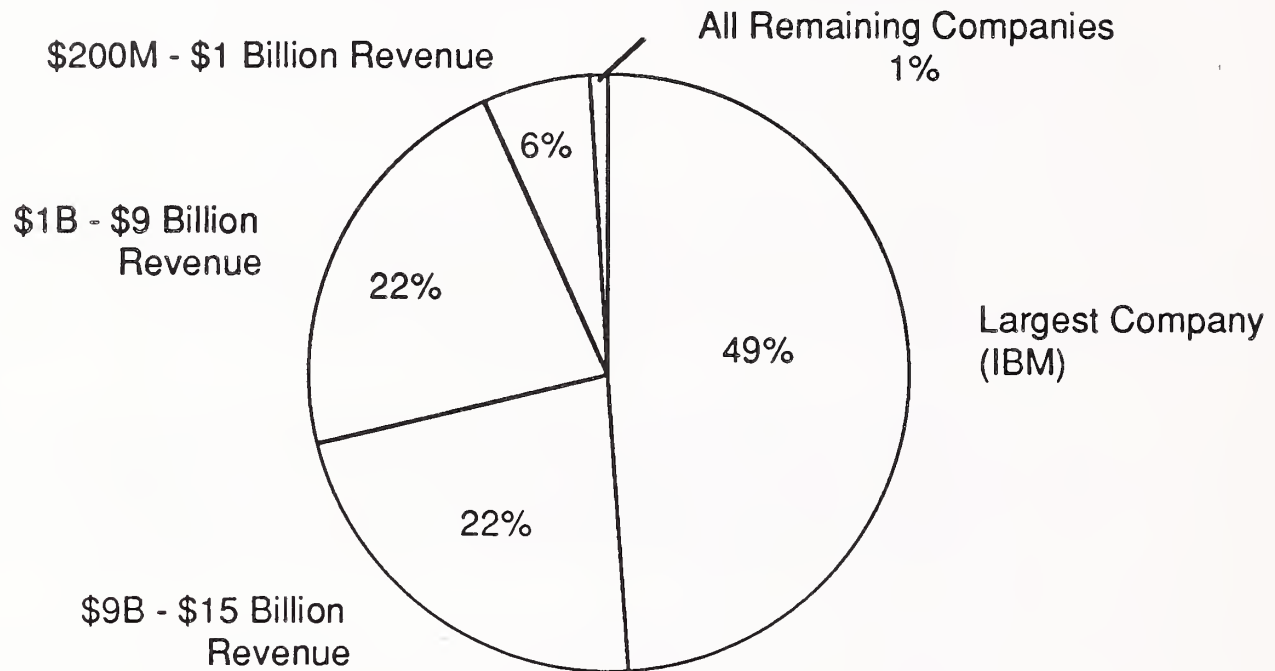
On the bright side, computer systems manufacturers are second only to the PC software segment (SFTP) in revenue per employee. Sixty percent of CSMR companies show revenue per employee ratings above the industry average, and CSMR's average improved 9% from before.

The healthiest of the large CSMR companies appear to be Hewlett-Packard, Apple, and Sun Microsystems. Among the next tiers, AST Research made all of the other top 10 rankings, followed by Dell, IPL Systems, and Network General Corp.

Overall, this segment is faced with persistent declining revenues, earnings, and profitability. The only bright spot is the high level of revenue per employee—which even improved from earlier.

EXHIBIT VII-1

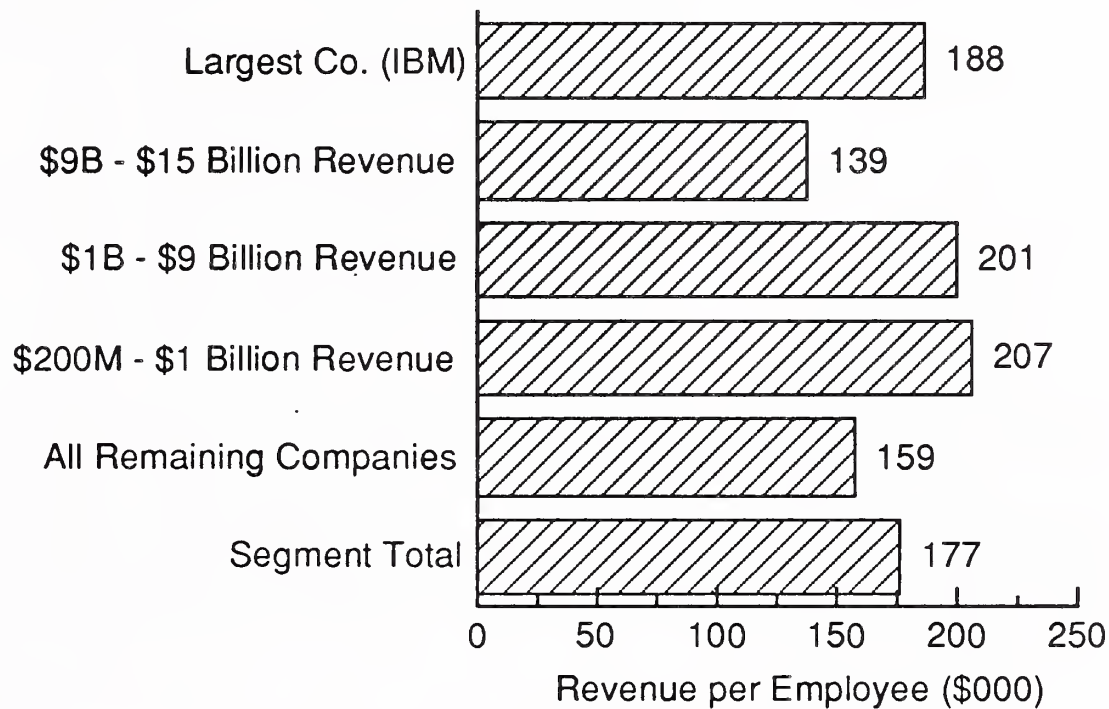
Computer Systems Manufacturers (CSMR) Revenue Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Segment	Number of Companies
Largest Co. (IBM)	64,792	49	1
\$9B - \$15 Billion Revenue	29,187	22	2
\$1B - \$9 Billion Revenue	29,744	22	9
\$200M - \$1 Billion Revenue	7,398	6	17
All Remaining Companies	1,486	1	24
Segment Total	132,607	100	53

EXHIBIT VII-2

Computer Systems Manufacturers (CSMR) Revenue per Employee Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs.		Revenue per Employee (\$000)
	Revenue (\$M)	Number of Employees	
Largest Co. (IBM)	64,792	344,553	188
\$9B - \$15 Billion Revenue	29,187	210,000	139
\$1B - \$9 Billion Revenue	28,705	143,071	201
\$200M - \$1 Billion Revenue	7,398	35,679	207
All Remaining Companies	1,486	9,374	159
Segment Total	131,568	742,677	177

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

EXHIBIT VII-3

Computer Systems Manufacturers (CSMR) Revenue Leaders

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Int'l Business Machines	64,792	69,018	-6
2	Hewlett-Packard	14,949	13,538	10
3	Digital Equipment	14,238	13,072	9
4	Unisys Corp.	8,696	10,111	-14
5	Apple Computer	6,496	5,741	13
6	Sun Microsystems	3,455	2,763	25
7	Compaq Computer	3,271	3,599	-9
8	Wang Laboratories	1,940	2,354	-18
9	Tandem Computers	1,933	1,873	3
10	Amdahl Corp.	1,702	2,159	-21

EXHIBIT VII-4

Computer Systems Manufacturers (CSMR) Revenue Growth Leaders

Revenue Growth Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Sulcus Computer Corp.	18	5	270
2	IPL Systems Inc.	60	29	111
3	Zeos Int'l Ltd.	231	127	82
4	Dell Computer Corp.	890	546	63
5	Zycad Corp.	43	30	43
6	AST Research Inc.	827	586	41
7	Silicon Graphics Inc.	638	482	32
8	Syntrex Inc.	62	47	32
9	Sequoia Systems Inc.	73	57	28
10	Network General Corp.	57	44	28

Note: Based on available public data as of April 10, 1992.

EXHIBIT VII-5

Computer Systems Manufacturers (CSMR) Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Hewlett-Packard	856	771	11
2	Apple Computer	325	501	-35
3	Sun Microsystems	199	151	32
4	Compaq Computer	131	455	-71
5	Cray Research	113	113	0
6	Data General	77	-107	172
7	AST Research Inc.	70	53	34
8	Dell Computer Corp.	51	27	87
9	Commodore Int'l	50	40	25
10	Stratus Computer Inc.	50	37	34

EXHIBIT VII-6

Computer Systems Manufacturers (CSMR) Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Quarters		Profit Margin (Percent)
		Earnings (\$M)	Revenue (\$M)	
1	Alpharel Inc.	1	7	21.0
2	IPL Systems Inc.	9	60	15.5
3	Network General Corp.	8	57	13.5
4	Cray Research	113	862	13.1
5	Zycad Corp.	5	43	12.1
6	Sequoia Systems Inc.	8	73	11.1
7	Stratus Computer Inc.	50	449	11.1
8	NBI Inc.	2	22	9.4
9	Atari Corp.	26	258	9.2
10	AST Research Inc.	70	827	8.5

Note: Based on available public data as of April 10, 1992.

EXHIBIT VII-7

**Computer Systems Manufacturers (CSMR)
Revenue per Employee Leaders**

Revenue/ Employee Rank	Company	Latest 4 Quarters		Revenue/ Employee (\$000)
		Revenue (\$M)	No. Employees	
1	IPL Systems Inc.	60	114	530
2	Apple Computer	6,496	14,432	450
3	Dell Computer Corp.	890	2,050	434
4	Zeos Int'l Ltd.	231	549	421
5	Tandon Corp.	461	1,155	399
6	Network General Corp.	57	148	384
7	Compaq Computer	3,271	10,000	327
8	Adv. Logic Research	227	699	325
9	AST Research Inc.	827	2,960	280
10	Sun Microsystems	3,455	12,480	277

EXHIBIT VII-8

**Computer Systems Manufacturers (CSMR)
Earnings per Employee Leaders**

Earnings/ Employee Rank	Company	Latest 4 Quarters		Earnings/ Employee (\$000)
		Earnings (\$M)	No. Employees	
1	IPL Systems Inc.	9	114	82
2	Network General Corp.	8	148	52
3	Alpharel Inc.	1	31	45
4	Zycad Corp.	5	163	32
5	Dell Computer Corp.	51	2,050	25
6	AST Research Inc.	70	2,960	24
7	Sequoia Systems Inc.	8	345	24
8	Apple Computer	325	14,432	23
9	Cray Research	113	5,395	21
10	Atari Corp.	26	1,260	20

Note: Earnings shown in this exhibit are only of those companies that reported number of employees. Based on available public data as of April 10, 1992.

EXHIBIT VII-9

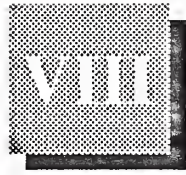
Computer Systems Manufacturers (CSMR) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Int'l Business Machines	64,792	-6	-2,827	-0.9	188	1	32	53	27	20
Hewlett-Packard	14,949	10	856	5.7	168	2	20	1	15	28
Digital Equipment	14,238	9	-864	-6.1	118	3	21	50	37	46
Unisys Corp.	8,696	-14	-1,393	-16.0	144	4	38	52	41	38
Apple Computer	6,496	13	325	5.0	450	5	17	2	19	2
Sun Microsystems	3,455	25	199	5.8	277	6	11	3	13	10
Compaq Computer	3,271	-9	131	4.0	327	7	35	4	21	7
Wang Laboratories	1,940	-18	-380	-19.2	116	8	40	49	44	47
Tandem Computers	1,933	3	-66	-3.4	173	9	27	48	30	25
Amdahl Corp.	1,702	-21	11	0.3	181	10	43	15	25	23
Data General	1,212	-2	77	6.4	143	11	28	6	12	39
Commodore Int'l	1,039	4	50	5.7	N/A	12	26	9	17	53
Dell Computer Corp.	890	63	51	5.7	434	13	4	8	16	3
Cray Research	862	7	113	13.1	160	14	23	5	4	30
AST Research Inc.	827	41	70	8.5	280	15	6	7	10	9
Silicon Graphics Inc.	638	32	37	5.7	248	16	7	11	14	13
Everex Systems Inc.	492	15	-31	-6.4	216	17	15	42	38	15
Tandon Corp.	461	5	-48	-10.4	399	18	25	43	39	5
Stratus Computer Inc.	449	11	50	11.1	180	19	18	10	7	24
Norsk Data	402	7	-20	-5.0	156	20	22	41	33	33
Mentor Graphics Corp.	400	-8	-62	-15.4	146	21	34	46	40	37
MAI Systems Corp.	329	-14	-60	-18.2	124	22	37	45	43	44
Atari Corp.	258	-37	26	9.2	205	23	50	12	9	18
Datapoint Corp.	258	-4	9	2.6	148	24	29	18	23	36
Concurrent Computer	238	-20	14	-19.6	119	25	42	13	45	45
Zeos Int'l Ltd.	231	82	10	4.5	421	26	3	16	20	4
Adv. Logic Research	227	25	12	5.3	325	27	12	14	18	8

EXHIBIT VII-9 (CONT.)

Computer Systems Manufacturers (CSMR) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Pyramid Technology	221	11	-11	-5.0	185	28	19	37	34	21
Sequent Computer Sys.	213	-14	-49	-22.8	156	29	39	44	47	32
Convex Computer	198	-5	-7	-3.5	163	30	30	34	31	29
Northgate Comp. Corp.	180	N/A	-4	-2.5	259	31	53	33	29	12
Encore Computer Corp.	165	-27	-63	-38.4	98	32	47	47	50	51
Filenet Corp.	122	19	8	6.6	159	33	14	19	11	31
Miltope Group Inc.	103	-7	3	3.2	137	34	33	23	22	40
Sequoia Systems Inc.	73	28	8	11.1	212	35	9	20	6	17
Syntrex Inc.	62	32	-10	-16.3	149	36	8	36	42	35
IPL Systems Inc.	60	111	9	15.5	530	37	2	17	2	1
Network General Corp.	57	28	8	13.5	384	38	10	21	3	6
Alliant Comp Systems	50	-33	-13	-25.5	129	39	49	38	49	42
Alpha Microsystems	49	-12	-3	-5.6	149	40	36	31	35	34
Intelligent Systems	49	-6	-2	-4.0	184	41	31	30	32	22
General Automation	48	15	0	-1.1	126	42	16	28	28	43
Zycad Corp.	43	43	5	12.1	267	43	5	22	5	11
Floating Point Systems	40	-18	-19	-47.3	106	44	41	40	51	49
Iverson Technology	38	-24	-7	-20.0	199	45	45	35	46	19
Quantel Corp.	30	-22	2	2.0	169	46	44	25	24	26
Apertus Technologies	25	-27	-1	-5.6	102	47	46	29	36	50
NBI Inc.	22	-39	2	9.4	109	48	51	24	8	48
ARIX Corp.	20	-42	-18	-90.2	135	49	52	39	52	41
Moniterm Corp.	19	-30	-4	-25.5	93	50	48	32	48	52
Sulcus Computer Corp.	18	270	N/A	N/A	168	51	1	51	53	27
Tempest Technologies	7	7	0	-0.1	248	52	24	27	26	14
Alpharel Inc.	7	23	1	21.0	212	53	13	26	1	16



Computer Component Manufacturers

Computer component manufacturers (CCMR) earn the major share of their revenue from the manufacture and distribution of primary components for computer systems, such as disk drives, terminals and printers.

Like the computer systems manufacturers (CSMR), the companies in this segment have declining earnings and profit margins compared to the prior issue of the *Computer Industry Financial Watch*. The problems applied to large and small companies alike, with 8 of the top 11 companies and 65% of the smallest 23 companies showing negative earnings, negative revenue growth, or both.

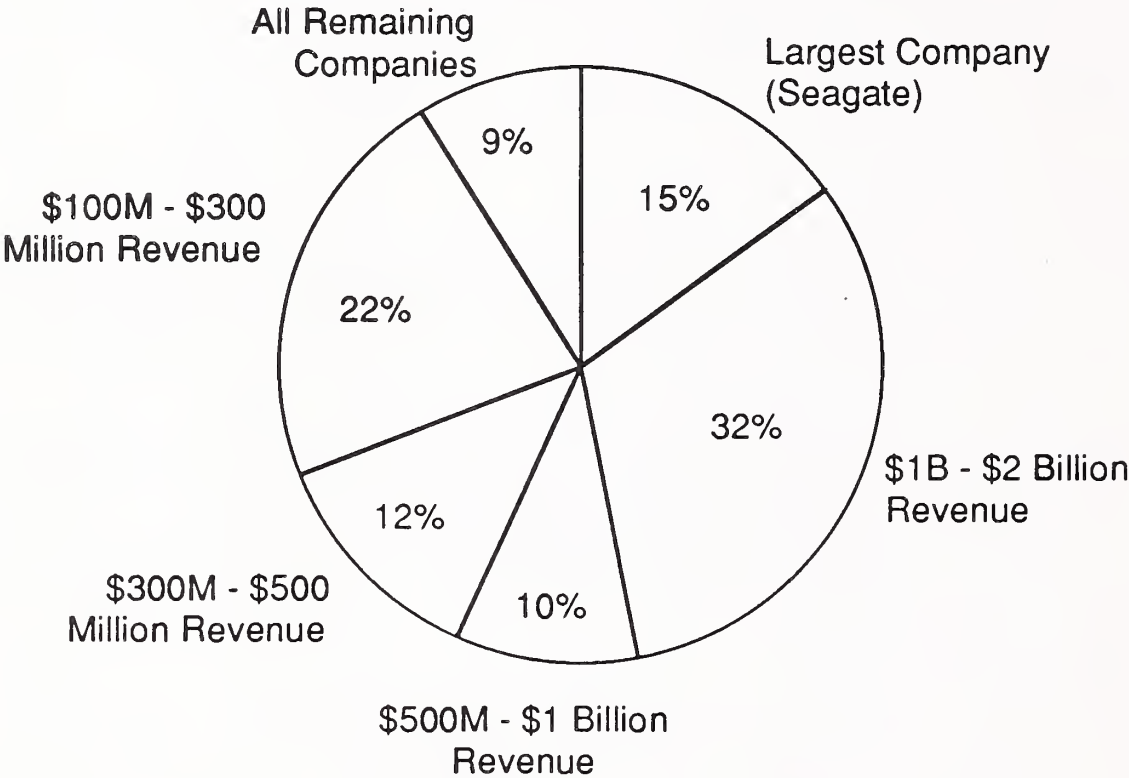
At the other end of the spectrum, the most profitable companies in the segment (above the 7% margin) enjoyed double-digit revenue growth rates and above-average revenues per employee, with only a few exceptions. Generally, the highest profit margins occurred in companies from two groups: those with revenues between \$200 million - \$300 million, and those with revenues in the \$41 million - \$65 million ranges.

Computer component manufacturers also have more companies in the top 20 in revenue per employee, despite having a segment average of \$135,000 that is below the industry average of \$158,000 per employee. Three of these companies—Tseng Laboratories, Quantum, and Cisco Systems—also ranked in over half of CCMR's top ten ranking charts.

In summary, negative earnings and declining revenues are spread broadly among the computer component manufacturers. Yet the successful CCMR companies enjoy healthy profit margins and growth in revenues.

EXHIBIT VIII-1

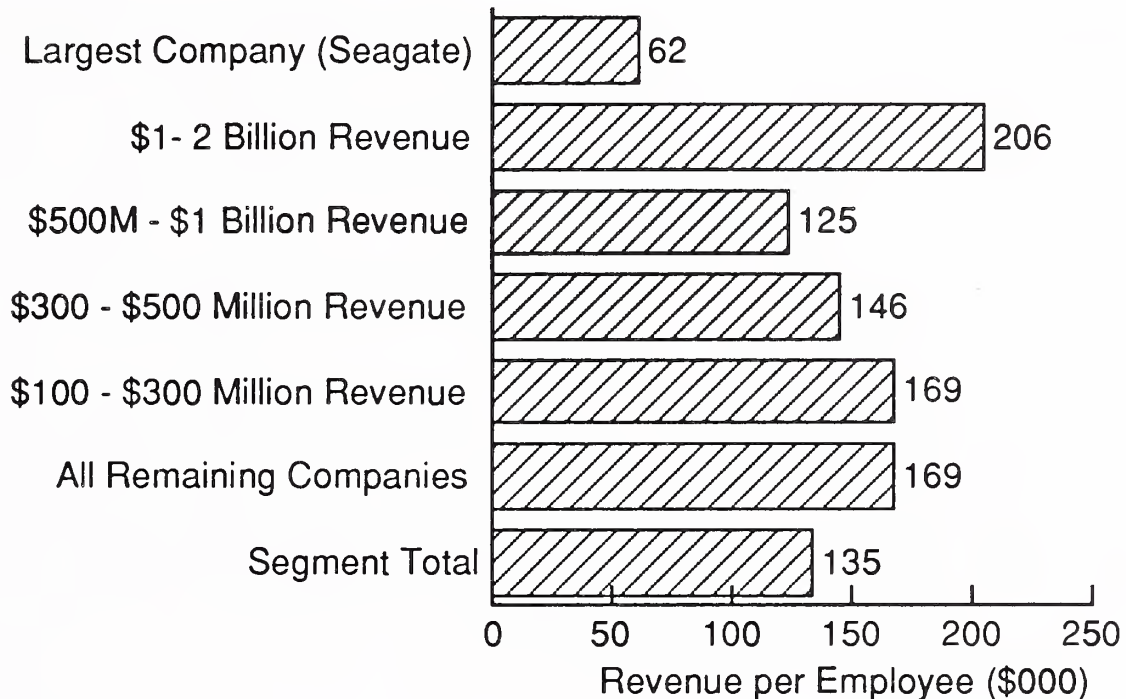
Computer Component Manufacturers (CCMR)
Revenue Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Percent of Segment	Number of Companies
Largest Company (Seagate)	2,669	15	1
\$1B - \$2 Billion Revenue	5,810	32	4
\$500M - \$1 Billion Revenue	1,877	10	2
\$300M - \$500 Million Revenue	2,174	12	6
\$100M - \$300 Million Revenue	4,116	22	23
All Remaining Companies	1,593	9	45
Segment Total	18,239	100	81

EXHIBIT VIII-2

Computer Component Manufacturers (CCMR) Revenue per Employee Distribution by Company Size



Company Size Grouping	Latest 4 Qtrs. Revenue (\$M)	Number of Employees	Revenue per Employee (\$000)
Largest Company (Seagate)	2,669	43,000	62
\$1- 2 Billion Revenue	5,810	28,245	206
\$500M - \$1 Billion Revenue	1,877	15,043	125
\$300 - \$500 Million Revenue	2,174	14,937	146
\$100 - \$300 Million Revenue	4,116	24,289	169
All Remaining Companies	1,470	8,685	169
Segment Total	18,116	134,199	135

Note: Revenues shown in this exhibit are only of those companies that reported number of employees.

EXHIBIT VIII-3

Computer Component Manufacturers (CCMR) Revenue Leaders

Revenue Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Seagate Technology	2,669	2,668	0
2	Conner Peripherals	1,599	1,338	20
3	Storage Technology	1,585	1,545	3
4	Memorex Telex	1,553	1,951	-20
5	Quantum Corp.	1,074	716	50
6	Maxtor Corp.	961	789	22
7	Western Digital Corp.	916	1,069	-14
8	Dynatech Corp.	477	485	-2
9	3Com Corp.	380	423	-10
10	Micropolis Corp.	351	381	-8

EXHIBIT VIII-4

Computer Component Manufacturers (CCMR) Revenue Growth Leaders

Revenue Growth Rank	Company	Revenue (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Cisco Systems Inc.	244	116	110
2	Mirror Technologies	18	10	75
3	Digi International	46	26	73
4	Chipcom Corp.	48	28	69
5	ICOT Corp.	22	13	65
6	Tseng Laboratories	61	38	59
7	Standard Microsystems	133	87	53
8	Quantum Corp.	1074	716	50
9	Computer Network Tech.	22	15	49
10	XYPLEX Inc.	41	28	47

Note: Based on available public data as of April 10, 1992.

EXHIBIT VIII-5

Computer Component Manufacturers (CCMR) Earnings Leaders

Earnings Rank	Company	Earnings (\$ Millions)		Change (Percent)
		Latest 4 Qtrs.	Prior 4 Qtrs.	
1	Storage Technology	93	92	1
2	Conner Peripherals	92	130	-29
3	Cisco Systems Inc.	59	27	120
4	Quantum Corp.	50	67	-26
5	Exabyte	32	28	17
6	Synoptics Comm.	27	28	-5
7	Symbol Technologies	23	8	201
8	Cirrus Logic	18	20	-9
9	Nat'l Computer Systems	15	13	19
10	Network Systems	15	22	-31

EXHIBIT VIII-6

Computer Component Manufacturers (CCMR) Profit Margin Leaders

Profit Margin Rank	Company	Latest 4 Quarters		Profit Margin (Percent)
		Earnings (\$M)	Revenue (\$M)	
1	ICOT Corp.	6	22	26.9
2	Cisco Systems Inc.	59	244	24.1
3	Teknekron Comm. Systems	11	45	23.6
4	Digi International	9	46	19.0
5	Cambex Corp.	8	46	18.1
6	Tseng Laboratories	10	61	16.1
7	Exabyte	32	234	13.8
8	XYPLEX Inc.	5	41	12.5
9	Penril Datacomm.	6	51	11.6
10	Wellfleet Comm. Inc.	10	58	11.0

Note: Based on available public data as of April 10, 1992.

EXHIBIT VIII-7

Computer Component Manufacturers (CCMR) Revenue per Employee Leaders

Revenue/ Employee Rank	Company	Latest 4 Quarters		Revenue/ Employee (\$000)
		Revenue (\$M)	No. Employees	
1	Tseng Laboratories	61	45	1,356
2	Quantum Corp.	1,074	1,445	743
3	Mirror Technologies	18	35	514
4	Cisco Systems Inc.	244	505	483
5	RasterOps	76	168	453
6	Osicom Technologies	41	105	386
7	Radius Inc.	125	347	359
8	Cirrus Logic	167	478	349
9	Mass Microsystems	22	68	320
10	Standard Microsystems	133	428	310

EXHIBIT VIII-8

Computer Component Manufacturers (CCMR) Earnings per Employee Leaders

Earnings/ Employee Rank	Company	Latest 4 Quarters		Earnings/ Employee (\$000)
		Earnings (\$M)	No. Employees	
1	Tseng Laboratories	10	45	218
2	Cisco Systems Inc.	59	505	116
3	Teknekron Comm. Systems	11	195	54
4	ICOT Corp.	6	112	53
5	Cambex Corp.	8	159	52
6	Digi International	9	166	52
7	Wellfleet Comm. Inc.	10	212	46
8	Cirrus Logic	18	478	38
9	Exabyte	32	877	37
10	Quantum Corp.	50	1,445	34

Note: Earnings shown in this exhibit are only of those companies that reported number of employees. Based on available public data as of April 10, 1992.

EXHIBIT VIII-9

Computer Component Manufacturers (CCMR) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Seagate Technology	2,669	0	-11	-0.4	62	1	49	67	47	74
Conner Peripherals	1,599	20	92	5.8	195	2	25	2	28	31
Storage Technology	1,585	3	93	5.9	157	3	44	1	27	46
Memorex Telex	1,553	-20	-386	-24.9	183	4	68	81	75	35
Quantum Corp.	1,074	50	50	4.6	743	5	8	4	33	2
Maxtor Corp.	961	22	-66	-6.8	116	6	22	79	54	65
Western Digital Corp.	916	-14	-96	-10.4	136	7	63	80	60	56
Dynatech Corp.	477	-2	12	2.6	152	8	51	14	39	47
3Com Corp.	380	-10	3	0.7	228	9	58	35	43	21
Micropolis Corp.	351	-8	4	1.2	126	10	55	26	41	58
Archive Corp.	345	4	-49	-14.3	139	11	42	78	67	53
Symbol Technologies	319	38	23	7.1	145	12	14	7	19	50
Nat'l Computer Systems	303	-4	15	5.1	114	13	53	9	31	66
QMS Inc.	294	3	14	4.9	191	14	43	12	32	32
Synoptics Comm.	248	41	27	10.8	259	15	13	6	11	16
Cisco Systems Inc.	244	110	59	24.1	483	16	1	3	2	4
Exabyte	234	37	32	13.8	267	17	15	5	7	15
EMC Corp.	232	36	13	5.6	201	18	17	13	29	27
Qume Corp.	220	0	-14	-6.3	231	19	48	70	53	19
Genicom Corp.	217	-15	-13	-7.7	86	20	64	69	56	72
Network Systems	199	21	15	7.7	143	21	23	10	17	51
Digital Communications	198	6	15	7.5	190	22	40	11	18	33
Rexon Inc.	181	7	11	6.1	225	23	38	16	26	22
MIPS Computer Systems	169	11	-35	-20.6	217	24	34	77	71	25
Cirrus Logic	167	16	18	10.8	349	25	27	8	12	8
Network Equipment Tech.	164	13	-33	-20.6	171	26	33	76	73	39
Recognition Equipment	161	-24	3	-0.4	117	27	72	33	46	64
Gandalf Tech Inc	150	6	-15	-10.0	109	28	39	73	59	68
Emulex Corp	147	8	-1	-0.6	168	29	36	50	48	42
Titan Corp	146	18	3	2.3	109	30	26	31	40	69
IOMEGA Corp	137	13	12	9.0	118	31	32	15	14	63

EXHIBIT VIII-9 (CONT.)

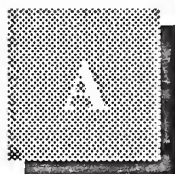
Computer Component Manufacturers (CCMR) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Standard Microsystems	133	53	1	0.4	310	32	7	42	44	10
Key Tronic Corp.	125	-13	-12	-9.6	56	33	60	68	58	75
Radius Inc.	125	4	4	3.3	359	34	41	27	37	7
CMS Enhancements	123	-16	-15	-12.1	224	35	67	72	65	23
Data Switch Corp.	103	-15	-32	-31.9	160	36	66	75	77	45
Rodime PLC	94	20	-14	-15.1	91	37	24	71	68	71
Printronic Inc.	88	-25	-10	-11.8	76	38	74	66	63	73
System Industries	77	-21	-9	-11.2	146	39	69	65	62	49
RasterOps	76	28	5	6.4	453	40	19	25	25	5
Telematics Int'l Inc.	64	-3	-4	-5.8	180	41	52	57	52	36
Tseng Laboratories	61	59	10	16.1	1356	42	6	18	6	1
Retix	60	15	4	6.7	N/A	43	30	28	22	76
North Atlantic Industries	59	41	4	6.6	170	44	12	30	23	41
Wellfleet Comm. Inc.	58	N/A	10	11.0	274	45	81	19	10	14
Penril Datacomm.	51	1	6	11.6	119	46	47	23	9	62
Masstor Systems	49	9	-6	-12.1	240	47	35	62	64	17
Chipcom Corp.	48	69	4	8.4	236	48	4	29	15	18
Cambex Corp.	46	37	8	18.1	290	49	16	21	5	12
Digi International	46	73	9	19.0	275	50	3	20	4	13
Teknekron Comm Sys.	45	32	11	23.6	230	51	18	17	3	20
Bytex Corp.	45	1	2	5.4	151	52	46	36	30	48
Scan Optics Inc.	42	0	1	1.2	110	53	50	41	42	67
XYPLEX Inc.	41	47	5	12.5	224	54	10	24	8	24
Osicom Technologies	41	-45	-7	-17.4	386	55	78	64	70	6
Interphase Corp.	40	25	3	6.8	161	56	21	34	20	44
LXE Inc.	39	46	3	8.4	186	57	11	32	16	34
Dataram Corp.	35	27	2	6.8	295	58	20	37	21	11
Sigma Designs Inc.	28	-23	-3	-12.5	125	59	71	56	66	59
Xylogics Inc.	26	-11	-2	-7.5	170	60	59	53	55	40
Distributed Logic Corp.	26	-40	-6	-21.4	210	61	76	61	74	26
Televideo Systems	24	-44	-2	-8.6	177	62	77	52	57	38
Gateway Communicatns.	24	-6	0	0.2	198	63	54	46	45	28

EXHIBIT VIII-9 (CONT.)

Computer Component Manufacturers (CCMR) All Companies Ranked by Revenue

Company	Current Rev. (\$M)	Rev. Growth (%)	Current Earn. (\$M)	Profit Margin (%)	Rev./ Emp.	Rank in Industry Segment by:				
						Rev.	Rev. Growth	Earn.	Profit Margin	Rev./ Emp.
Computer Network Tech.	22	49	2	9.2	164	64	9	38	13	43
ICOT Corp.	22	65	6	26.9	197	65	5	22	1	29
Mass Microsystems	22	2	-4	-20.6	320	66	45	59	72	9
Datametrics	21	-13	1	3.7	124	67	61	39	34	60
Computer Identities	21	15	1	3.7	129	68	31	40	35	57
Mirror Technologies	18	75	0	-2.2	514	69	2	49	51	3
Alloy Computer Prod.	17	-39	-5	-31.8	N/A	70	75	60	76	79
Datasouth Computer	15	16	0	-1.1	N/A	71	28	47	49	78
Ramtek Corp.	15	-13	-2	-16.3	142	72	62	54	69	52
General Parametrics	14	7	0	3.1	179	73	37	44	38	37
Ciprico Inc.	11	15	0	-1.8	137	74	29	48	50	55
Profit Technology Inc.	11	-24	-18	-168.9	N/A	75	73	74	81	81
Helionetics	10	-54	-7	-68.1	N/A	76	80	63	80	80
Codenoll Technology	10	-8	-1	-10.6	137	77	57	51	61	54
LTI Technologies	9	-15	0	3.3	N/A	78	65	45	36	77
Personal Comp. Prod.	9	-23	-4	-45.5	195	79	70	58	78	30
Termiflex Corp.	8	-8	1	6.6	122	80	56	43	24	61
Kustom Electronics	5	-49	-3	-57.6	92	81	79	55	79	70



Background Data—All Companies

EXHIBIT A-1

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Empl.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
3Com Corp.	CCMR	48	380	-10	349	0.09	N/A	1,668	3/26/92	May
Acclaim Enmnt. Inc.	SOFT	110	142	1	150	-0.06	N/A	90	4/ 2/92	Aug
Accugraph Corp.	SOFT	279	13	10	N/A	-0.07	5	85		Aug
Acxiom Corp.	PROC	144	89	-10	75	0.25	87	1,540	1/23/92	Mar
Adobe Systems Inc.	SFTP	70	240	30	1,134	2.27	242	701	3/16/92	Nov
Adv. Comp. Techniques	SOFT	327	5	-2	N/A	-0.10	4	70		Dec
Adv. Logic Research	CSMR	75	227	25	84	1.12	130	699	1/28/92	Sep
AlCorp. Inc.	SOFT	250	20	-12	73	-0.71	26	147	1/20/92	Mar
Aldus Corp.	SFTP	97	168	24	377	1.54	179	952	2/ 4/92	Dec
Alias Research Inc.	SOFT	221	30	53	62	-1.14	24	162	12/ 4/91	Jan
Alliant Comp. Systems	CSMR	179	50	-33	9	-0.93	43	386	10/22/91	Dec
Alloy Computer Products	CCMR	260	17	-39	0	-1.04	7	N/A	11/11/91	Dec
Alpha Microsystems	CSMR	180	49	-12	7	-0.97	26	330	1/ 6/92	Feb
Alpharel Inc.	CSMR	320	7	23	N/A	0.14	10	31	2/18/92	Dec
Altai Inc.	SOFT	302	9	21	4	-0.17	6	78	2/27/92	Jul
Amdahl Corp.	CSMR	15	1,702	-21	1,794	0.04	2,336	9,400	1/23/92	Dec
American Mgmt. Sys.	PROF	59	285	9	200	1.12	146	3,200	2/19/92	Dec
American Software	SOFT	132	114	15	377	0.88	N/A	804	2/24/92	Apr
Ametech Inc.	PROF	287	11	29	N/A	0.02	11	N/A		Dec
Anacomp Inc.	PROC	34	625	-6	189	0.43	669	4,600	2/ 6/92	Sep
Analysts International	PROF	129	120	5	84	1.10	34	1,750	1/14/92	Jun
Apertus Technologies	CSMR	230	25	-27	23	-0.12	44	249	1/16/92	Mar
Apple Computer	CSMR	6	6,496	13	6,902	2.66	3,745	14,432	1/17/92	Sep
Archive Corp.	CCMR	50	345	4	125	-3.76	261	2,489	2/ 4/92	Sep
ARIX Corp.	CSMR	251	20	-42	6	-2.25	9	145	2/10/92	Jun
Artisoft Inc.	SOFT	173	54	N/A	454	0.61	67	248	1/16/92	Jun
ASA Int'l Ltd.	SOFT	237	23	25	N/A	0.09	N/A	136	3/19/92	Dec
ASK Computer Sys.	SOFT	46	396	60	N/A	-2.88	306	2,142	1/23/92	Jun
AST Research Inc.	CSMR	31	827	41	544	2.23	515	2,960	1/17/92	Jun
Atari Corp.	CSMR	65	258	-37	N/A	0.41	N/A	1,260	4/ 6/92	Dec
Authorized Distribn. Net.	SOFT	323	6	-73	N/A	-0.85	4	157		Aug
Auto Graphics Inc.	PROC	290	10	-1	N/A	-0.06	7	150		Dec

Note: Based on available public data as of April 10, 1992

EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Auto-Trol Technology	SOFT	155	64	-17	22	-1.05	31	660	1/27/92	Sep
Autodesk Inc.	SFTP	61	285	20	793	2.31	N/A	1,102	2/20/92	Jan
Autoinfo Inc.	PROC	284	12	25	30	0.19	N/A	50	3/31/92	May
Automatic Data Proc.	PROC	14	1,811	4	6,357	1.72	1,659	19,000	1/14/92	Jun
Automatix Inc.	SOFT	297	9	21	N/A	0.00	3	65	3/19/92	Dec
AW Computer Systems	SOFT	301	9	187	N/A	N/A	N/A	35	3/17/92	Dec
Bachman Info. Systems	SOFT	203	39	N/A	177	0.24	43	287	1/20/92	Jun
Banctec Inc.	PROC	89	183	-3	148	1.69	171	1,714	1/16/92	Mar
Barra Inc.	PROF	218	31	N/A	101	0.27	26	N/A	2/ 7/92	Mar
Barrister Info. Systems	SOFT	255	19	-29	1	-12.81	11	258	2/11/92	Mar
BGS Systems Inc.	SOFT	231	25	13	106	1.82	N/A	132	4/ 7/92	Jan
Bishop Inc.	SOFT	282	12	11	0	-0.35	3	63		Sep
Bloc Dev. Corp.	SFTP	192	43	65	N/A	-0.11	N/A	230	3/24/92	Dec
Blyth Holdings Inc.	SOFT	315	7	54	9	-0.67	4	89	2/14/92	Mar
BMC Software Inc.	SOFT	93	174	48	1,531	1.63	207	593	1/20/92	Mar
Bolt Beranek & Newman	SOFT	64	263	-1	94	0.27	163	2,284	1/24/92	Jun
Boole & Babbage Inc.	SOFT	136	99	0	75	-2.72	69	643	1/29/92	Sep
Borland International	SFTP	42	437	23	1,330	-2.87	386	986	1/20/92	Mar
Brandon Systems Corp.	PROF	205	38	3	31	0.60	19	6,214	2/ 7/92	Sep
Broderbund Software	SFTP	152	66	N/A	225	0.86	51	271	3/25/92	Aug
Bytex Corp.	CCMR	190	45	1	N/A	0.38	N/A	296	1/23/92	Dec
Cabletron Systems	SOFT	57	291	61	1,413	2.08	N/A	1,371	4/ 2/92	Feb
CACI Int'l Inc.	PROF	115	135	-9	58	0.19	58	2,260	1/22/92	Jun
Cadence Design Sys.	SOFT	47	392	69	N/A	-0.56	N/A	1,676	1/28/92	Dec
Caere Corp.	SFTP	214	32	17	N/A	1.08	45	139	1/27/92	Dec
CAM Data Systems	SOFT	321	6	22	5	-0.01	2	57	1/28/92	Sep
Cambex Corp.	CCMR	185	46	37	158	0.97	N/A	159	4/ 1/92	Aug
CE Software Holdings	SOFT	298	9	32	42	0.26	9	80	1/31/92	Sep
Cerner Corp.	SOFT	146	77	51	N/A	1.41	N/A	428	2/25/92	Dec
Chipcom Corp.	CCMR	184	48	69	N/A	0.55	N/A	203	2/ 5/92	Dec
Cimflex Teknowledge	SOFT	262	17	-47	N/A	-0.47	16	204		Dec
Ciprico Inc.	CCMR	285	11	15	10	-0.11	9	83	1/27/92	Sep
Cirrus Logic	CCMR	98	167	16	345	0.99	132	478	1/23/92	Mar
Cisco Systems Inc.	CCMR	69	244	110	2,319	0.93	219	505	2/ 7/92	Jul
CMS Enhancements	CCMR	126	123	-16	8	-5.11	39	549	2/18/92	Jun
CMS/Data Corp.	SOFT	268	15	25	6	0.03	12	200	2/14/92	Jun
Codenoll Technology	CCMR	295	10	-8	N/A	-0.22	N/A	71	3/31/92	Dec
Cognos Inc.	SOFT	118	132	16	104	0.57	97	1,023	12/19/91	Feb
Commodore Int'l	CCMR	25	1,038	4	N/A	1.77	760	N/A	1/28/92	Jun

Note: Based on available public data as of April 10, 1992

EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Comnet Inc.	SOFT	216	32	21	108	0.60	32	190	2/14/92	Mar
Comp. Language Res.	PROC	131	116	-3	N/A	0.28	79	1,432	2/27/92	Dec
Compaq Computer	CSMR	8	3,271	-9	2,210	1.49	2,826	10,000	1/29/92	Dec
Comptek Research	PROF	160	62	21	79	0.81	30	619	1/16/92	Mar
Computer Associates	SOFT	20	1,438	10	2,746	0.96	2,308	6,700	1/22/92	Mar
Computer Data Sys.	SOFT	116	134	6	28	1.26	54	N/A	1/10/92	Jun
Computer Horizons	PROF	140	95	-5	N/A	0.87	N/A	1,258	2/14/92	Dec
Computer Identics	CCMR	247	21	15	N/A	0.08	N/A	160	1/28/92	Dec
Computer Net. Tech.	CCMR	240	22	49	66	0.13	21	136	2/ 4/92	Dec
Computer Sciences	PROF	11	1,945	16	1,116	3.99	1,342	22,900	1/20/92	Mar
Computer Task Group	PROF	60	285	17	N/A	0.10	138	4,059	1/28/92	Dec
Computrac Inc.	SOFT	280	12	15	12	-0.20	N/A	94	3/16/92	Jan
Comshare Inc.	SOFT	127	123	6	88	0.80	121	1,125	1/24/92	Jun
Concord Computing	PROC	176	51	29	196	0.68	42	392	1/31/92	Sep
Concurrent Computer	CSMR	71	238	-20	N/A	-23.90	N/A	2,000	1/31/92	Jun
Conner Peripherals	CCMR	16	1,599	20	1,096	1.57	1,335	8,200	1/23/92	Dec
Consilium Inc.	SOFT	217	32	3	86	0.16	40	262	2/25/92	Oct
Continuum Inc.	PROF	120	128	32	232	0.75	113	1,150	1/20/92	Mar
Control Data Corp.	PROC	19	1,525	-10	N/A	-0.21	1,214	14,500	2/ 4/92	Dec
Convergent Solutions	SOFT	317	7	17	11	-0.35	17	75	2/14/92	Sep
Convex Computer	CSMR	86	198	-5	N/A	-0.31	273	1,215	1/31/92	Dec
Cray Research	CSMR	29	862	7	1,124	4.15	1,079	5,395	1/22/92	Dec
Cybertek Corp.	SOFT	225	28	-1	29	0.87	39	254	1/20/92	Mar
Cycare Systems Inc.	PROC	149	74	-4	N/A	0.11	N/A	1,188	2/10/92	Dec
Data General	CSMR	21	1,212	-2	294	2.30	995	8,500	1/23/92	Sep
Data Switch Corp.	CCMR	134	103	-15	29	-2.76	69	645	1/31/92	Dec
Data Transmission Net.	PROC	244	21	20	47	0.43	31	N/A	2/19/92	Dec
Datametrics	CCMR	245	21	-13	4	0.16	N/A	172	2/20/92	Oct
Datapoint Corp.	CSMR	66	258	-4	34	-0.30	N/A	1,741	3/ 2/92	Jul
Dataram Corp.	CCMR	210	35	27	64	0.64	19	118	2/11/92	Apr
Datasouth Computer	CCMR	267	15	16	17	-0.03	17	N/A	2/17/92	Dec
Dell Computer Corp.	CSMR	28	890	63	864	2.11	N/A	2,050	3/11/92	Jan
Delphi Information Sys.	SOFT	201	39	67	39	-0.17	30	264	2/ 4/92	Mar
Delta Computec Inc.	PROC	306	9	30	4	0.08	6	108		Oct
Develcon Electronics	SOFT	310	8	-4	N/A	-0.16	N/A	N/A		Aug
Digi International	CCMR	186	46	73	171	0.68	56	166	1/27/92	Sep
Digital Communications	CCMR	85	198	6	227	1.31	257	1,047	1/ 8/92	Jun
Digital Equipment	CSMR	3	14,238	9	6,667	-7.00	11,944	121,000	1/16/92	Jun

Note: Based on available public data as of April 10, 1992

EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Dimensional Medicine	SOFT	326	5	-14	N/A	-0.33	5	55	1/29/92	Mar
Distributed Logic Corp.	CCMR	228	26	-40	2	-2.20	11	123		Oct
Dynatech Corp.	CCMR	38	477	-2	184	1.33	307	3,150	1/22/92	Mar
Easel Corp.	SFTP	224	28	64	N/A	0.69	29	143	1/20/92	Dec
Edmark Corp.	SFTP	329	5	39	9	0.14	4	25	1/20/92	Jun
Electronic Arts	SOFT	111	142	47	487	0.62	87	300	1/20/92	Mar
Electronic Data Systems	PROC	5	7,028	17	N/A	1.18	5,703	70,500	2/24/92	Dec
EMC Corp.	CCMR	73	232	36	327	0.51	190	1,155	2/13/92	Dec
Emulex Corp.	CCMR	108	147	8	65	-0.09	102	871	2/ 3/92	Jun
Encore Computer Corp.	CSMR	99	165	-27	24	-1.80	136	1,679	10/28/91	Dec
Envoy Corp.	PROC	220	30	10	N/A	0.61	N/A	183	2/ 4/92	Dec
Everex Systems Inc.	CSMR	37	492	15	165	-1.31	237	2,285	2/26/92	Jul
Exabyte	CCMR	72	234	37	734	1.51	150	877	1/17/92	Dec
FDP Corp.	SOFT	261	17	8	23	0.08	20	192	3/20/92	Nov
FileNet Corp.	CSMR	128	122	19	N/A	0.75	104	770	2/14/92	Dec
Fiserv Inc.	PROC	63	281	54	492	1.27	740	3,700	1/28/92	Dec
Fisher Business Sys.	SOFT	319	7	-28	3	-0.30	2	72		Jan
Floating Point Systems	CSMR	199	40	-18	6	-1.76	46	377	8/22/91	Oct
Gandalf Tech. Inc.	CCMR	107	150	6	43	-1.02	147	1,373	3/10/92	Jul
Gateway Commun.	CCMR	236	24	-6	N/A	0.01	N/A	119	2/20/92	Dec
General Automation	CSMR	183	48	15	16	-0.05	28	380	2/17/92	Sep
General Computer Corp.	SOFT	277	13	3	27	0.27	N/A	167	3/26/92	May
General Parametrics	CCMR	273	14	7	26	0.06	N/A	81	2/19/92	Oct
General Sciences Corp.	SOFT	266	16	23	8	0.14	11	211		Jul
Genicom Corp.	CCMR	80	217	-15	13	-1.58	137	2,512	1/28/92	Dec
Gerber Scientific Inc.	SOFT	67	257	-8	273	0.31	282	1,700	2/21/92	Apr
GMIS Inc.	SOFT	303	9	47	N/A	0.44	N/A	61	2/11/92	Dec
Goal Systems Int'l	SOFT	119	128	18	270	0.42	N/A	868	2/27/92	Jan
Group 1 Software Inc.	SOFT	222	29	21	95	0.94	28	120	2/14/92	Mar
GTECH Corp.	PROC	52	321	27	N/A	N/A	363	1,890		Feb
Hadron Inc.	PROF	215	32	5	8	0.04	13	680	2/18/92	Jun
Hathaway Corp.	SOFT	162	61	20	19	0.16	35	603	1/27/92	Jun
HBO & Co.	SOFT	95	171	-2	N/A	-0.21	N/A	1,963	1/30/92	Dec
Helionetics	CCMR	293	10	-54	N/A	-1.58	12	N/A	10/17/91	Dec
Henry (Jack) & Assoc.	PROC	246	21	12	62	0.53	18	108	1/15/92	Jun
Hewlett-Packard	CSMR	2	14,949	10	20,358	3.40	12,276	89,000	2/19/92	Oct
Hogan Systems Inc.	SOFT	171	57	42	70	0.36	61	360	1/27/92	Mar
ICOT Corp.	CCMR	241	22	65	48	0.46	21	112	2/12/92	Jul

Note: Based on available public data as of April 10, 1992

EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
IIS Intelligent Info.	SOFT	189	45	57	N/A	1.24	N/A	320	11/14/91	Dec
IMRS Inc.	SOFT	202	39	N/A	108	0.54	41	262	1/16/92	Jun
Infodata Systems Inc.	SOFT	281	12	-2	N/A	-0.07	N/A	158	3/11/92	Dec
Information America	PROC	265	16	13	N/A	0.18	N/A	N/A	2/14/92	Dec
Information Resources	PROC	83	208	25	589	0.65	189	3,679	2/12/92	Dec
Information Solutions	SOFT	332	5	2	N/A	0.03	N/A	29	3/19/92	Dec
Informix Corp.	SFTP	92	180	23	N/A	0.85	133	1,242	2/13/92	Dec
Inforum Inc.	SOFT	318	7	95	N/A	0.29	N/A	N/A	2/ 3/92	Dec
Ingres Corp.	SOFT	104	157	20	N/A	0.01	157	1,286	7/30/90	Jun
Integral Systems	SOFT	289	10	-12	8	0.71	6	78		Sep
Integrated Systems Inc.	SOFT	232	25	34	111	-0.85	38	127	3/30/92	Feb
IntelliCorp. Inc.	SOFT	283	12	-32	15	-1.63	16	147	2/ 5/92	Jun
Intelligent Systems	CSMR	181	49	-6	N/A	-0.27	N/A	264	3/ 4/92	Dec
Intellogic Trace Inc.	PROF	125	124	-1	10	-1.73	68	1,517	3/ 2/92	Jul
Intercim Corp.	SOFT	311	8	2	10	0.00	6	67	2/12/92	Jun
Intergraph Corp.	SOFT	22	1,195	14	860	1.47	997	10,300	1/27/92	Dec
Interleaf Inc.	SOFT	141	94	12	135	0.26	79	771	1/23/92	Mar
Intermetrics Inc.	PROF	163	61	16	20	0.62	26	610	1/ 9/92	Feb
Interphase Corp.	CCMR	198	40	25	33	0.66	N/A	251	2/25/92	Oct
Int'l Business Machines	CSMR	1	64,792	-6	47,680	-0.99	92,473	344,553	1/17/92	Dec
IOMEGA Corp.	CCMR	114	137	13	125	0.75	87	1,153	1/21/92	Dec
IPL Systems Inc.	CSMR	164	60	111	N/A	1.73	N/A	114	2/25/92	Dec
Iverson Technology	CSMR	206	38	-24	N/A	-1.96	N/A	190	3/30/92	Dec
Keane Inc.	PROF	138	96	3	N/A	1.22	N/A	1,358	4/ 8/92	Dec
Key Tronic Corp.	CCMR	123	125	-13	49	-1.55	64	2,241	1/ 6/92	Jun
KnowledgeWare Inc.	SOFT	122	125	36	172	0.47	115	841	1/21/92	Jun
Kustom Electronics	CCMR	325	5	-49	N/A	N/A	5	60		Sep
Landmark Graphics	SOFT	137	97	26	127	1.10	96	499	1/20/92	Jun
LEGENT Corp.	SOFT	82	208	15	866	1.61	298	1,138	1/20/92	Sep
Logicon Inc.	PROF	58	286	12	118	1.60	104	3,157	1/29/92	Mar
Lotus Development Corp.	SFTP	30	829	20	N/A	0.98	N/A	3,500	1/30/92	Dec
LTI Technologies	CCMR	299	9	-15	N/A	0.09	2	N/A		Dec
LXE Inc.	CCMR	204	39	46	N/A	0.60	32	208	1/22/92	Dec
MacNeal-Schwendler	SOFT	172	56	-1	129	-0.23	N/A	319	3/25/92	Jan
MAI Systems Corp.	CSMR	51	329	-14	32	-1.96	317	2,642	2/17/92	Sep
Manatron Inc.	SOFT	300	9	7	8	0.19	N/A	108	3/16/92	Apr
Marcam Corp.	SOFT	166	60	25	185	0.66	42	470	1/21/92	Sep
Mass Microsystems	CCMR	243	22	2	N/A	-0.90	7	68	2/26/92	Dec
Masstor Systems	CCMR	182	49	9	N/A	-0.32	34	202	11/19/91	Dec

Note: Based on available public data as of April 10, 1992

EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Maxtor Corp.	CCMR	26	961	22	282	-2.61	398	8,303	1/21/92	May
Meca Software Inc.	SFTP	269	15	-14	23	-0.54	15	107	1/23/92	Jun
Mediagenic	SOFT	292	10	-82	N/A	-5.54	2	50		Mar
Medical Marketing Grp.	SOFT	272	15	96	327	0.28	126	N/A	1/24/92	Jun
Medicus Systems Corp.	SOFT	248	20	N/A	57	0.39	14	162	3/24/92	May
Mediware Info. Systems	PROF	314	7	61	8	0.08	8	47	2/21/92	Jun
Medstat Systems Inc.	SOFT	249	20	42	136	0.35	20	194	1/24/92	Sep
Memorex Telex	CCMR	18	1,553	-20	N/A	-11.16	1,646	8,500		Mar
Mentor Graphics Corp.	CSMR	45	400	-8	N/A	-1.43	446	2,747	2/ 4/92	Dec
Micro Healthsystems	SOFT	264	16	65	76	0.61	14	79	2/10/92	Mar
Micrografx Inc.	SFTP	200	40	50	129	0.84	37	223	1/23/92	Mar
Micropolis Corp.	CCMR	49	351	-8	142	0.32	245	2,780	1/22/92	Dec
Microprose Inc.	SFTP	208	36	N/A	94	N/A	27	N/A		Mar
Microsoft Corp.	SFTP	10	2,276	54	21,010	3.03	2,128	8,226	1/17/92	Jun
Miltope Group Inc.	CSMR	133	103	-7	N/A	0.57	N/A	754	2/25/92	Dec
MIPS Computer Sys.	CCMR	96	169	11	N/A	-1.45	N/A	777	2/ 4/92	Dec
Mirror Technologies	CCMR	258	18	75	24	-0.04	5	35	1/27/92	Mar
Moniterm Corp.	CSMR	254	19	-30	1	-0.91	10	202	11/13/91	Dec
MPSI Systems	SOFT	212	35	-7	11	-0.77	23	471	1/31/92	Sep
National Techteam	PROF	309	8	9	14	0.01	3	150	3/11/92	Dec
Nat'l Computer Systems	CCMR	54	303	-4	232	0.96	218	2,650	3/12/92	Jan
NBI Inc.	CSMR	242	22	-39	1	0.17	25	200	1/30/92	Jun
Network Equip. Tech.	CCMR	100	164	13	206	-2.34	166	963	1/23/92	Mar
Network General Corp.	CSMR	170	57	28	287	0.50	58	148	1/22/92	Mar
Network Systems	CCMR	84	199	21	407	0.50	343	1,392	2/12/92	Dec
New Image Industries	SOFT	307	8	-36	16	-2.65	9	56	1/17/92	Jun
Norsk Data	CSMR	44	402	7	N/A	-0.59	462	2,579		Dec
North Atlantic Industries	CCMR	167	59	41	N/A	1.02	N/A	350	2/12/92	Dec
Northgate Comp. Corp.	CSMR	91	180	N/A	N/A	-0.07	41	697		Dec
Novell Inc.	SFTP	32	710	35	8,207	1.23	797	2,843	2/27/92	Oct
On-Line Software Int'l	SOFT	135	101	13	90	0.79	89	708	6/27/91	May
Oracle Systems Corp.	SOFT	23	1,105	4	1,867	0.27	821	7,466	3/24/92	May
Osicom Technologies	CCMR	197	41	-45	N/A	-2.28	15	105	6/12/91	Jan
Pansophic Systems	SOFT	76	226	-1	284	0.50	164	N/A		Apr
Parametric Technology	SOFT	174	52	78	714	0.44	59	305	1/15/92	Sep
Pay-Fone Systems Inc.	PROC	328	5	-3	4	-0.24	5	96	2/18/92	Jun
Paychex Inc.	PROC	105	154	16	439	0.94	N/A	2,300	3/17/92	May
PDA Engineering	SOFT	207	37	3	65	0.65	33	245	1/16/92	Jun
Penril Datacomm.	CCMR	177	51	1	45	0.85	30	427	2/12/92	Jul

Note: Based on available public data as of April 10, 1992

EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Penta Systems Int'l	SOFT	324	6	-38	N/A	-0.39	3	54		Dec
Perle Systems Ltd.	SOFT	257	18	32	12	0.40	11	121		May
Personal Comp. Prod.	CCMR	304	9	-23	7	-0.73	6	45	2/12/92	Jun
Phoenix Technologies	SFTP	169	58	49	103	-0.03	42	309	1/22/92	Sep
Platinum Technology	SOFT	223	29	90	N/A	0.25	N/A	90	2/21/92	Dec
Policy Mgmt. Systems	SOFT	43	415	20	1,620	2.21	592	4,403	1/28/92	Dec
Printronic Inc.	CCMR	145	88	-25	18	-3.38	51	1,150	1/23/92	Mar
Profit Technology Inc.	CCMR	288	11	-24	N/A	-1.23	6	N/A		Dec
Progress Software	SOFT	156	64	41	218	1.09	64	452	4/ 6/92	Nov
Proteon Inc.	SOFT	139	95	28	N/A	0.44	N/A	406	2/13/92	Dec
Pyramid Technology	CSMR	78	221	11	169	-0.94	213	1,193	1/21/92	Sep
QMS Inc.	CCMR	56	294	3	111	1.27	161	1,538	1/22/92	Sep
Quality Systems Inc.	SOFT	286	11	-12	6	-0.22	8	123	2/13/92	Mar
Quantel Corp.	CSMR	219	30	-22	N/A	0.04	16	180		Apr
Quantum Corp.	CCMR	24	1,074	50	615	1.12	496	1,445	1/22/92	Mar
Quarterdeck Office Sys.	SFTP	178	50	38	357	0.59	48	190	1/28/92	Sep
Qume Corp.	CCMR	79	220	0	13	-1.29	110	953	1/14/92	Feb
Rabbit Software Corp.	SOFT	316	7	-20	N/A	-0.13	N/A	83	2/19/92	Dec
Radius Inc.	CCMR	124	125	4	114	0.28	72	347	1/15/92	Sep
Rainbow Technologies	SFTP	253	19	39	N/A	0.80	N/A	68	2/ 5/92	Dec
Ramtek Corp.	CCMR	271	15	-13	2	-0.47	6	103	2/10/92	Jun
RasterOps	CCMR	148	76	28	105	0.84	48	168	1/20/92	Jun
Recognition Equipment	CCMR	101	161	-24	129	-0.05	N/A	1,368	2/20/92	Oct
Retix	CCMR	165	60	15	N/A	0.29	N/A	N/A	2/5/92	Dec
Rexon Inc.	CCMR	90	181	7	95	1.21	134	808	1/23/92	Sep
Reynolds & Reynolds	SOFT	36	592	-3	403	2.41	517	4,826	1/22/92	Sep
Rodime PLC	CCMR	142	94	20	N/A	-0.10	N/A	1,027		Sep
Ross Systems Inc.	SOFT	154	64	38	127	0.39	49	457	1/27/92	Jun
Rubicon Corp.	SOFT	331	5	-6	4	0.07	4	45	2/ 3/92	Jun
Samna Corp.	SOFT	274	14	39	N/A	-0.45	13	123	10/19/90	Dec
Sandata Inc.	PROC	294	10	2	2	0.04	6	147		May
Saztec International	PROC	233	24	16	4	-0.12	10	570	2/14/92	Jun
Scan Optics Inc.	CCMR	193	42	0	N/A	0.08	N/A	386	2/28/92	Dec
Scientific Software Intrc.	SOFT	238	23	21	N/A	-1.28	38	217	11/20/91	Dec
Script Systems Inc.	SOFT	322	6	5	4	0.11	5	44	1/10/92	Jun
SCS/Compute Inc.	SFTP	213	34	-6	14	-0.11	36	1,146	12/17/91	Jan
Seagate Technology	CCMR	9	2,669	0	855	-0.17	1,742	43,000	1/17/92	Jun
SEI Corp.	PROC	87	188	12	293	1.39	83	1,485	2/ 6/92	Dec
Sequent Comp. Systems	CSMR	81	213	-14	319	-2.10	246	1,364	1/27/92	Dec

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EXHIBIT A-1 (CONT.)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Sequoia Systems Inc.	CSMR	150	73	28	118	0.90	68	345	1/16/92	Jun
Shared Medical Systems	PROC	41	439	9	438	1.11	293	N/A	2/19/92	Dec
SHL Systemhouse	PROF	35	614	1	492	-0.55	474	2,867	1/16/92	Aug
Sierra On-Line Inc.	SOFT	196	41	41	113	0.80	42	412	2/ 3/92	Mar
Sigma Designs Inc.	CCMR	226	28	-23	36	-0.67	N/A	220	3/11/92	Jan
Silicon Graphics Inc.	CSMR	33	638	32	909	0.66	698	2,568	1/22/92	Jun
Silvar-Lisco	SOFT	296	10	-13	7	-0.24	5	76	1/27/92	Mar
Softech Inc.	PROF	175	52	2	9	-0.43	23	574	3/24/92	May
Software Publishing	SFTP	112	141	-8	252	-1.73	121	725	1/21/92	Sep
Software Toolworks Inc.	SFTP	143	90	15	163	-1.35	92	268	2/11/92	Mar
Spinnaker Software	SFTP	229	26	136	58	0.09	21	115	1/21/92	Jun
Standard Microsystems	CCMR	117	133	53	120	0.05	N/A	428	4/ 8/92	Feb
Star Technologies	SOFT	209	35	7	26	-0.16	20	194	1/21/92	Mar
State of the Art Inc.	SFTP	252	19	18	N/A	0.55	27	106	1/16/92	Dec
Sterling Software Inc.	SOFT	77	225	11	178	0.91	225	2,000	2/14/92	Sep
Storage Technology	CCMR	17	1,585	3	2,443	2.33	1,700	10,100	1/28/92	Dec
Stratus Computer Inc.	CSMR	40	449	11	1,005	2.22	385	2,492	1/21/92	Dec
Structural Dynamics Res.	SOFT	106	152	22	515	0.67	N/A	1,100	4/ 7/92	Dec
Sulcus Computer Corp.	CSMR	259	18	270	N/A	N/A	N/A	106	3/ 4/92	Dec
Summa Medical Corp.	PROF	313	7	4,287	14	-0.36	3	33		Mar
Sun Microsystems	CSMR	7	3,455	25	N/A	1.93	2,341	12,480	1/28/92	Jun
Sungard Data Systems	PROC	62	284	8	N/A	1.40	313	1,640	2/ 6/92	Dec
Sybase Inc.	SOFT	102	159	55	478	0.38	143	N/A	1/27/92	Dec
Symantec Corp.	SFTP	88	184	67	935	0.74	93	600	1/23/92	Mar
Symbol Technologies	CCMR	53	319	38	437	0.91	354	2,200	2/13/92	Dec
Symix Systems Inc.	SOFT	239	23	51	34	0.51	18	190	1/28/92	Jun
Synercom Technology	SOFT	270	15	17	10	-0.23	17	146	2/21/92	Oct
Synoptics Comm.	CCMR	68	248	41	400	1.32	164	959	1/30/92	Dec
Syntrex Inc.	CSMR	159	62	32	N/A	N/A	32	419	3/13/91	Oct
System Industries	CCMR	147	77	-21	21	-1.58	N/A	530	2/24/92	Jul
System Software Assoc.	PROF	94	171	26	500	1.17	N/A	781	2/20/92	Oct
Systems & Comp. Tech.	PROF	151	70	44	107	0.32	53	1,050	1/16/92	Sep
Systems Center Inc.	SOFT	121	126	19	N/A	0.55	N/A	809	2/10/92	Dec
Tandem Computers	CSMR	13	1,933	3	1,317	-0.61	1,962	11,167	1/23/92	Sep
Tandon Corp.	CSMR	39	461	5	N/A	-0.75	N/A	1,155	3/23/92	Dec
Technalysis Corp.	PROF	256	18	-10	N/A	0.87	N/A	269	2/18/92	Dec
Technology Solutions	PROF	158	63	N/A	301	0.94	74	325	3/19/92	May
Teknekron Comm. Sys.	CCMR	188	45	32	N/A	0.86	N/A	195	2/ 3/92	Dec
Telematics Int'l Inc.	CCMR	153	64	-3	51	-0.22	51	358	2/19/92	Dec

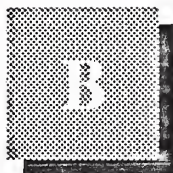
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EXHIBIT A-1 (CONT)

Background Data

Company	Industry Sector	Rev. Rank	Current Rev. (\$M)	Rev. Growth (%)	Market Value (\$M)	Earn. per Share	Total Assets (\$M)	No. of Emp.	Latest Quarter Rpt. Date	Fiscal Yr. End (Month)
Televideo Systems	CCMR	234	24	-44	37	-0.05	N/A	136	3/ 2/92	Oct
Tempest Technologies	CSMR	312	7	7	N/A	0.00	4	30		Mar
Teradata Corp.	SOFT	55	297	25	460	0.56	302	1,493	1/24/92	Jun
Termiflex Corp.	CCMR	308	8	-8	9	0.40	7	67	1/17/92	Jun
Terrano Corp.	SOFT	305	9	32	N/A	0.22	7	68	2/27/92	Dec
Timberline Software	SOFT	278	13	0	19	0.01	6	N/A	1/30/92	Dec
Titan Corp.	CCMR	109	146	18	N/A	0.25	N/A	1,350	2/20/92	Dec
Total System Services	PROC	130	117	27	445	0.98	N/A	1,264	4/ 6/92	Dec
Triad Systems Corp.	SOFT	113	140	-2	69	0.19	128	1,356	1/16/92	Sep
Tseng Laboratories	CCMR	161	61	59	N/A	0.52	N/A	45	2/20/92	Dec
TSR Inc.	PROC	276	13	-23	5	0.05	8	106	1/ 8/92	May
Ultimate Corp.	SOFT	103	159	-19	22	-1.65	N/A	494	3/12/92	Apr
Uniquet Inc.	SOFT	291	10	212	28	-0.10	N/A	82	3/26/92	May
Unisys Corp.	CSMR	4	8,696	-14	1,597	-9.37	8,432	60,300	1/23/92	Dec
Verdix Corp.	SOFT	263	16	23	50	0.10	17	103	2/ 6/92	Mar
Viewlogic Systems Inc.	SOFT	194	42	38	N/A	0.27	51	N/A	1/29/92	Dec
Wang Laboratories	CSMR	12	1,940	-18	977	-2.24	1,312	16,792	1/21/92	Jun
Warner Insurance Svcs.	PROC	157	63	35	59	0.28	N/A	458	2/20/92	Oct
Wasatch Education Sys.	SOFT	275	14	65	N/A	-0.66	8	130		Dec
Wellfleet Comm. Inc.	CCMR	168	58	N/A	480	0.44	76	212	1/17/92	Jun
Western Digital Corp.	CCMR	27	916	-14	113	-3.28	570	6,740	2/ 5/92	Jun
Wicat Systems Inc.	SFTP	187	45	-13	64	-0.05	40	496	1/17/92	Mar
Wiland Services Inc.	PROC	211	35	17	N/A	0.38	N/A	317	2/25/92	Dec
Xylogics Inc.	CCMR	227	26	-11	21	-0.91	N/A	153	2/11/92	Oct
XYPLEX Inc.	CCMR	195	41	47	146	0.93	44	185	2/ 5/92	Dec
XYVision Inc.	SOFT	235	24	-18	N/A	-1.30	20	214		Mar
Zeos Int'l Ltd.	CSMR	74	231	82	N/A	1.33	N/A	549	2/20/92	Dec
Zycad Corp.	CSMR	191	43	43	N/A	0.30	N/A	163	1/21/92	Dec

Note: Based on available public data as of April 10, 1992



Changes in Companies Included in This Report

EXHIBIT B-1

Companies That Are No Longer Reported By Compustat

Company	IP Sector
Altos Computer Systems	* CSMR
Ashton-Tate Co.	* SFTP
Corvus Systems Inc.	* CCMR
Daisy Systems Corp.	* CSMR
Intermec Corp.	* CCMR
Lasermaster Technologies Inc.	CSMR
NCR Corp.	* CSMR
Priam Corp.	** CCMR
Sharedata Inc.	** SOFT
Software Developers Co. Inc.	SOFT
Syntech International Inc.	* CCMR
Valid Logic Systems Inc.	* CSMR
Zitel Corp.	CCMR

* = Acquired, Merged, or Taken Private

** = No Longer Active

EXHIBIT B- 2

**Prior Companies With Revenue
Under \$5 Million or N/A**

Company	Revenue (\$M)	IP Sector
Computer Communications Inc.	3.430	CCMR
Cray Computer Corp.	0.333	CCMR
Creative Computer Appl.	4.912	PROF
Electro Brain Int'l	4.999	SOFT
Information Science	N/A	SOFT
Management Technologies Inc.	3.111	SOFT
National Health Enhance Systems	4.964	SOFT
Raydon Technology Corp.	N/A	PROC
Softguard Systems Inc.	3.567	SFTP
Transform Logic Corp.	4.987	SOFT
Videocart Inc.	3.768	PROC
Wordstar Int'l	N/A	SFTP
Worlco Data Systems Inc.	N/A	PROC
Zentec Corp.	4.647	CCMR

EXHIBIT B- 3

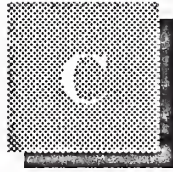
Companies Added To The Data Base

Company	Revenue (\$M)	IP Sector
Anacomp Inc.	624.859	PROC
Artisoft Inc.	54.387	SOFT
Autoinfo Inc.	11.576	PROC
Bachman Information Systems	38.95	SOFT
Barra Inc.	30.804	PROF
Brandon Systems Corp.	38.335	PROF
Broderbund Software Inc.	66.378	SFTP
CACI Int'l Inc.	134.668	PROF
Concord Computing Corp.	51.152	PROC
Edmark Corp.	5.087	SFTP
General Parametrics Corp.	14.474	CCMR
Gerber Scientific Inc.	256.966	SOFT
GMIS Inc.	8.832	SOFT
IMRS Inc.	39.122	SOFT
Information America Inc.	16.067	PROC
Information Resources Inc.	207.683	PROC
Inforum Inc.	6.65	SOFT
Medical Marketing Group Inc.	14.537	SOFT
Medicus Systems Corp.	19.996	SOFT
Mediware Information Systems	7.125	PROF
Microprose Inc.	36.051	SFTP
Northgate Computer Corp.	180.308	CSMR

EXHIBIT B- 3 (CONT.)

Companies Added To The Database

Company	Revenue (\$M)	IP Sector
Paychex Inc.	154.168	PROC
Policy Management Systems Corp.	415.366	SOFT
Profit Technology Inc.	10.684	CCMR
Progress Software Corp.	63.683	SOFT
Quarterdeck Office Systems	49.924	SFTP
Retix	60.45	CCMR
Reynolds & Reynolds	591.657	SOFT
SEI Corp.	187.85	PROC
Summa Medical Corp.	7.283	PROF
Sybase Inc.	159.448	SOFT
Technology Solutions Co.	63.18	PROF
Teknekron Communications Sys.	44.755	CCMR
Uniquet Inc.	10.155	SOFT
Viewlogic Systems Inc.	42.068	SOFT
Warner Insurance Svcs. Inc.	63.32	PROC
Wellfleet Comm. Inc.	58.078	CCMR
Western Star Inc.	5.059	SOFT



Variable Definitions

Revenue - Gives the most recent four quarters of reported sales from any revenue source that is expected to continue for the life of the company. This represents gross sales reduced by discounts and allowances, and is expressed in millions of dollars.

Revenue growth - Represents the most recent four quarters' revenue divided by the prior four quarters' revenue, with the result expressed as a percentage.

Earnings - Shows the profit (or loss) reported by a company (before taxes) after expenses and losses have been subtracted from all revenues and gains for the most recent four quarters. Adjustment for extraordinary items and discontinued operations is included in the calculation, and the result is expressed in millions of dollars.

Earnings growth - Represents the most recent four quarters' earnings divided by the prior four quarters' earnings, with the result expressed as a percentage.

Market value - Is based on the monthly average close price of the stock multiplied by the quarterly number of common shares outstanding. The result is shown in millions of dollars.

Earnings per share - Represents the primary earnings for the last four quarters available for common stock and divided by the 12-month moving share figure.

Total assets - Includes current assets plus net plant plus other noncurrent and intangible assets.

Number of employees - Represents the number of company workers as reported to shareholders. It is reported by some firms as an average number of employees, and by some as the number of employees at year end. This measure is not available for some companies, and it is generally only updated annually.

Revenue per employee - Shows the total revenue divided by the number of employees, with the result expressed in thousands of dollars.

Earnings per employee - Shows the total earnings divided by the number of employees, with the result expressed in thousands of dollars.

Latest quarter end - Gives the last quarter of the company's fiscal year for which data have been reported and are included here.

Fiscal year end - Tells the ending month of each company's fiscal year.

Many of these indicators are reported quarterly; some are only updated annually.

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